ISSN (print): ۲۵۸۸-۵۷۳۱ E-ISSN: ۳۰۶۰-۶۵۳۵

Presenting the model of intelligent sales learning agent in sports start-ups According to the foundation's data method

Mehdi Rastegari[۱]

Received Date: ۱۴/۰۵/۲۰۲۴ *Accepted Date:* ۲۸/۱۰/۲۰۲۴
Pp.: ۱۳۲-۱۵۷

Abstract

Introduction: Sports startups have positive effects on the society by providing innovative solutions and will improve sports facilities and services in the future with the development of technology and innovation. The sports startup can be considered a fledgling startup that aims to achieve big goals with the aim of developing sports and supporting domestic manufacturers. This aim of this research was present the model of the intelligent agent learning sales in sports start-ups.

Methodology: the research method was qualitative research. The statistical community includes experts and knowledgeable people about sports. The sample volume was estimated with theoretical saturation of ۱۶ people using snowball sampling. The data collection tool in the qualitative section was a semi-structured interview. The validity and reliability of the work was used from Guba and Linkin's criteria, which consists of four more detailed concepts of credibility, transferability, verifiability, and reliability. Max Kyoda ۲۰ software was used for coding. To analyze the data, the systematic method of Strauss and Corbin was done with open, axial and selective coding. In this research, the intelligent sales learning agent was identified as the central category

Findings: The most important causal factors affecting it include smart digital sensors, smart digital actors, augmented and virtual reality technology, Internet of Things, cross-linguistic information retrieval, intelligent information retrieval, cloud computing, machine learning, big data, knowledge architecture, information/content/ organization Knowledge, smart digital support, digital structure, knowledge, knowledge and network attitude were smart contract platforms.

Conclusion: The present research led to the presentation of the model of the intelligent sales learning agent in sports start-ups using the data base method.

Key Words: intelligent learning agent/artificial intelligence, foundational data theory

[۱] - Departement of Physical Education, Firoozabad Branch, Islamic Azad University, Firoozabad, Iran corresponding author: mehdirastegari۶۳@yahoo.com)

Introduction

The e-commerce environment is becoming more complex and dynamic every day. New and innovative ideas of e-commerce can provide effective and useful methods and models in business transactions, especially in the stage of need identification, advertising, product and supplier identification, negotiation and agreement (Abdul Salim et al., ۲۰۲۱). One of the solutions of e-commerce is the use of software agents with the ability to learn and make intelligent decisions that can be used in buying and selling, making offers in tenders and auctions, negotiating and concluding contracts. Intelligent software agents are intermediaries that have fulfilled the human desire to automatically perform many activities in business (Johnson, ۲۰۲۲).

Agents are used to automatically perform time-consuming and repetitive tasks of users, searches, recommendations, as well as retrieve and manage information obtained for the buying and selling process, as well as in the development and transition of various stages of the customer buying behavior process, from traditional methods to methods compatible with modern e-commerce have been very effective (Nandi et al., ۲۰۲۲).

Smart factories are equipped with advanced sensors, multiple software and robotic technology (Ab and Jamili, ۲۰۲۲). These tools collect and analyze data and enable better decision making (Mukherjee and Chitipaka, ۲۰۲۲). These digital technologies lead to increased automation, monitoring and maintenance of equipment with a view to the future, self-optimization to improve processes, and above all, a new level of productivity and responsiveness to customers that was not possible before (Kasvan et al., ۲۰۲۲). The development of smart factories provides a great opportunity for the manufacturing industry to enter the fourth industrial revolution. The analysis of large volumes of big data collected from sensors deployed in the factory ensures real-time monitoring of production assets (Arshad Ali and Farooqi, ۲۰۲۲).

It can be said that these are the important achievements of the industry in connection with the fourth industrial revolution and artificial intelligence. In this article, an attempt is made to define intelligent agents and the quality of their activity in the field of electronic commerce (Alkinani et al., ۲۰۲۲).

The progress of providing services on the web has caused IT specialists to use this entrepreneurial opportunity and provide services as start-up companies (Yang et al., ۲۰۲۲). The main goal of start-up companies is to provide services with minimum time and cost, which currently have a well-known position in the world, especially in advanced countries (Lee Barkrohamkaran, ۲۰۲۲).

Among the most important services provided by startups is the provision of products in the financial field, which is called financial technology (Francis et al., ۲۰۲۲). In principle, fintech financial startups are in a good position and can replace traditional banks and financial service providers. The role of fintechs in the economy is very important (Johnson, ۲۰۲۲). With the expansion of computer science and, as a result, computer and electronic systems, the use cases of these tools in human daily life have been increasingly developed (Mukherjee and Chitipaka, ۲۰۲۲).

In this way, the role of the mentioned systems in life has become more prominent day by day and it seems more difficult to ignore their capabilities. Smartening means using technical and informational tools and techniques for proper management of affairs, facilitating activities, improving and improving lifestyles, accelerating accurate and more professional execution of affairs, reducing energy consumption and making maximum use of information technology services in order to improve indicators. Life is individual and social (Kasavan et al., ۲۰۲۲).

An intelligent agent is an independent entity that tries to achieve a goal using sensors and actuators. An intelligent agent may learn a lot of information and things from the environment to achieve its goals (Jang Wei et al., ۲۰۲۲). Intelligent agents have rules that need to be followed in their operation. Sensors, operators, and "actuators" are the three main components in the working process of the intelligent agent. Sensor: A device that detects environmental changes and sends information to other devices. The environment is observed by the intelligent agent through sensors (Abdul Salim et al., ۲۰۲۱). Actuator: It is also called a lever and it is one of the components of the machine that converts energy into movement. Operators are responsible for moving and controlling the system. Actor: devices that affect the environment (Alkinani et al., ۲۰۲۲).

The use of intelligent agents can increase the competitiveness of an organization and differentiate it from other organizations. This solution allows organizations to exploit the advantages of being competitive and leading by using the available information (Mukherjee and Chitipaka, ۲۰۲۲). This way makes it possible to better understand the demands and needs of customers and manage the relationship with them. This solution allows the organization to monitor positive or negative changes (Lee Barker Associates, ۲۰۲۲). Today, leading organizations seek to optimize processes by evaluating and improving their own performance and that of their subordinates, and increasing the performance efficiency of what has been invested has become more important (Johnson, ۲۰۲۲). In the past decade, many organizations have invested heavily in information technology, both software and hardware (Kridalukmana et al., ۲۰۲۲).

In today's economy where costs must be reduced, organizations and companies are asking themselves: How much have we invested in technology so far? In the age of information, the one who has information has power (Jang Wei et al., ۲۰۲۲). Any organization and company that has this power will be distinguished and privileged in its industry and profession compared to its competitors. Organizations and companies move and change at a fast pace. Obtaining the correct intelligent information at the correct time is the foundation of these organizations (Ab and Jamili, ۲۰۲۲).

Another reason for using smart agents is to reduce costs and increase revenues. In an organization that uses intelligent agents, managers can extract cost information from within the organization and know what the costs are and make decisions to reduce and eliminate them. Predict future changes intelligently and have an optimal solution for their problems (Nandi et al., ۲۰۲۲). Today, intelligent learning agents have many applications and

importance. These agents play a key role in e-commerce, information processing, information personalization, Instagram social network, information customization, product and service pricing, image tagging, sales and customer service (Yang et al., ۲۰۲۲).

According to the issues raised, the main question of the research is: What is the model of the intelligent sales learning agent in sports start-ups using the Foundation's data method?

Literature Review and background

Smart agent

An intelligent agent or an intelligent agent in the context of artificial intelligence is an entity that knows its surroundings in an environment and performs actions on the environment, and all actions it performs are aimed at achieving its goals (Francis and Daniel, ۲۰۲۲). Anything that detects the environment through sensors and affects the environment through levers or actuators is called an "agent" or "actuator". Agents perform tasks such as recognizing, thinking and acting in a program (Brandsen et al., ۲۰۲۲).

This system is capable of learning and then uses its acquired knowledge to accomplish its goals. This factor may be very simple or complex (Lee Barker et al., ۲۰۲۲). An intelligent agent is an independent entity that tries to achieve a goal using sensors and actuators. An intelligent agent may acquire a lot of information from the environment to achieve its goals. (Su Vechen, ۲۰۲۲).

Sports startup

A startup is a new business that is launched with the aim of finding a business model, and there is no guarantee of its success. A startup is an investment in the form of entrepreneurship, during which a start-up company presents a new business idea (Brandsen et al., ۲۰۲۲). According to the definition of Stanford University professor Steve Blank, a startup is an organization that is launched to find a repeatable and scalable business model. Of course, there are many differences over the definition of a startup; But the common point in all of them is that their activity starts based on a creative and new idea. These ideas target market needs and grow very quickly by offering a new product or service and using technology. Sports startups have recently been introduced as one of the attractive areas in the technology and business industry (Johnson, ۲۰۲۲). These startups, using innovation and technology, work to improve people's sports performance and experience. With the emergence of new technologies and increasing awareness about health and sports, sports startups are growing rapidly. This growth is due to two basic factors: firstly, increasing people's awareness of their health and physicality and secondly, technological advances (Abdul Salim et al., ۲۰۲۱).

Artificial intelligence

Artificial intelligence or machine intelligence is the intelligence that can be obtained from any type of machine (not human). Reference books in the field

of artificial intelligence consider this science to be the study of intelligent agents, which are defined as follows: any device that has the ability to understand the environment and operate with the maximum chance of success (Dogek, ۲۰۲۲). In general, the term artificial intelligence is used to describe machines or computers that perform cognitive activities related to the human mind well. Among the important cognitive activities, we can mention "learning" and "problem solving" (Tranfia Vali Chia, ۲۰۲۲).

Intelligent agents and electronic commerce

In today's world, the range of attention and patience of customers is becoming more and more limited. Today, platforms based on artificial intelligence are a vital element for the success of e-commerce (Albag Hazari et al., ۲۰۲۲). Intelligent agents in e-commerce play a constructive role in data-based decisions, because through deep learning, user behavior can be predicted from the beginning to the end of the purchase path. In today's world, customer behavior has changed (Francis and Daniel, ۲۰۲۲). When the customer feels a need, in the first step, he searches for it on the Internet. If we are not present in this market and cannot present our goods well, we will be destroyed over time.With the development of artificial intelligence and intelligent software agents, negotiating intelligent agents have become a popular and user-friendly tool (Brandsen et al., ۲۰۲۲). These software agents have three main tasks in today's business: matching buyers with sellers, facilitating transactions, and providing organizational infrastructure (Al-Shorideh et al., ۲۰۲۲). The operation of intelligent agents is completely automatic and they have ۱۰۰٪ control over the operations they perform. They have their own communication language and not only react to their defined environment, but because of their intelligence, they are capable of initiatives such as generating new goals (Su Vechen, ۲۰۲۲).

Intelligent agents, pricing and consumer

Smart agents can build customer and consumer loyalty by creating interactive chat programs. Chatbots can be a more effective way to communicate with customers (Dogek, ۲۰۲۲). They can answer frequently asked questions, recommend products, respond to complaints and most importantly collect valuable data from customers before transferring the call to a department store manager (Mukherjee and Chitipaka, ۲۰۲۲). Intelligent agents are able to propose the best pricing model for the product by analyzing the models and reduce the percentage of human error to almost zero. They can also adjust prices according to seasonal trends, competitive products and consumer demand (Ab and Jamili, ۲۰۲۲).

Internal and external background of the research

Researchers, before conducting the research and after choosing the topic and formulating the title and before writing the research plan, should expand their knowledge about the topic and problem they have chosen for research by referring to the documents and documents; In order to be able to redefine and

determine the research problem and its variables in the light of the obtained information and define their borders. This helps to align one's research with the body of research of the same family and harmonize it with the research achievements of others.

Table ١: Table ١: Summary of internal investigations

The authors of the article	Title of the article	Summary of research results
Kavosi and Moshiri ٢٠١٤	Improving the intelligent methods of combining information	Today, the need for intelligent systems that are able to provide the user with the information he needs from among the huge amount of available information is very noticeable. In this regard, in this article, an attempt has been made to design the architecture of a customized intelligent agent that is able to retrieve the information required by the user according to his interests from various information servers.
Ali Ahmadi and Hor Ali ٢٠١٤	Customer relationship management relying on web-based tools and intelligent agents	This article examines the factors affecting customer satisfaction and the types of services that can be provided to customers, and presents a comprehensive model of the factors affecting customer satisfaction on the Internet. In the following, you justify the effectiveness of the customer's purchase with the help of intelligent agents and finally summarize the role of such agents in the form of a conceptual model and express the conclusion.
Mansourian ٢٠١٤	Intelligent search agents and information retrieval in the web environment	The creation and expansion of intelligent agents in order to explore and retrieve information on the web is one of the new ways to facilitate the process of finding information on this network. These intelligent agents are designed to help Internet users in information retrieval and they are considered as one of the options worthy of attention to facilitate the process of searching and finding information in this environment. In this, it especially refers to the role of factors such as the characteristics of web-based resources, heterogeneity, instability, decentralization, expandability, and the rapid growth of their volume and diversity.
Hassanzadeh and Mohammadkhani ٢٠١٨	An overview of intelligent agents and their role in library services	In this article, an attempt has been made to introduce intelligent agents and the role they can play in information services. For this purpose, their mode of operation and applications have been discussed, and at the end, a model of intelligent agents and its role and applications in the library environment has been introduced. It is obvious that familiarizing librarians with these tools - which are a new generation of information retrieval and management tools - can be important for them in performing their duties.

Nami et al ۲۰۱۸	The role of intelligent agents in improving e-government activities	The use of intelligent agents in software engineering is one of the new topics in the implementation of complex distributed software systems. The purpose of this article is to study the role of agent characteristics in improving e-government activities. Then, while categorizing the characteristics of intelligent agents, an evaluation platform is proposed to improve the performance of electronic government. The use of agent-oriented methods in the production of reliable and complex software systems for different sectors of electronic government is one of the future researches in this field.
Faithful and Abdallahzadeh ۲۰۲۱	Patterns of learning stability analysis in intelligent software agents	Artificial intelligence techniques, such as learning, are widely used in agent-based systems. In this research, focusing on the requirement analysis stage as one of the first stages of the software production process, tools and techniques are proposed to solve these deficiencies in the analysis stage. In this article, the method of using the provided patterns to analyze the agent's learning ability in two different agent-based systems is described. These patterns can be used as a guide in the analysis of learning software agents. The advantage of using these models compared to the classical methods of software analysis is that, in addition to the common classes related to learning in the problem domain, they represent metaclasses in the system analysis model that also model the knowledge related to learning analysis.
Moradi et al ۲۰۱۲	Application of intelligent multi-factor system in decision making with knowledge management approach	Organizations are trying to find tools to perform the knowledge management process with high speed and accuracy. One of the tools that has proven to be effective and efficient in this field is intelligent agents. In this research, the goal is to provide an infrastructure of knowledge management by using intelligent agents; In a way that takes into account all aspects of knowledge management and facilitates the organization's decision-making, the simulation of the proposed system in a car manufacturing plant shows its efficiency and effectiveness in supporting and improving decision-making.
Sargazi Moghadam and Shahesvari ۲۰۱۵	An overview of the role of intelligent software agents in paper supply chain management	One of the most effective achievements of information technology is the improvement of business intelligence. Therefore, the use of intelligent software agents in supply chain management can improve management in this field. In this article, while providing general information in the field of supply chain management and intelligent software agents, some aspects of the application of these agents in supply chain management will be investigated, and some aspects of this application, such as the agent-based negotiation model, will be investigated.

Hassanzadeh ١٤٠٠	The fifth data revolution, the irreplaceable role of intelligent agents and the necessity of a national data organization	Examining the evolution of data management shows that the emergence of different technologies has not only reduced the value of data over time, but has also enhanced its status by creating fundamental changes. So far, four revolutions arising from printing technology, computer technology, internet technology, and social network technology have led to the formation of four revolutions in the field of data management, and the world is on the threshold of the fifth revolution, which is the use of intelligent agents in data management. The distinctive features of the fifth revolution have revealed the need for macro-policy and platform building for interdisciplinary collaborations for data management. In this article, the characteristics of each of the developments in the field of data management are explained and finally the formation of the National Data Organization is suggested.
Khan Mohammadi ١٤٠٠	Examining the obstacles to the use of intelligent agents in independent auditing	Artificial intelligence is one of the branches of computer science and refers to the development of hardware and software that imitate human thinking. In the field of auditing, various issues, such as increasing competition, legal issues and the desire to increase efficiency and effectiveness, create the necessary motivation to use information technology and artificial intelligence, and cause computer-based information systems to be raised as important tools in the profession.

Table ٢: Summary of Foreign investigations

The authors	Title of the article	Summary of research results
Abu Hadbah and Nafa ٢٠٢١	Presenting a simulated intelligent agent model for a given task in a specific environment	With the help of augmented and virtual reality technologies, the intelligent agent can better analyze and understand its surroundings and make decisions regarding it while automatically executing processes. Also, the intelligent agent is able to calculate the amount of stable changes in the external environment and make logical decisions and automatically perform an action based on its characteristics.
Sidlavskyne ٢٠٢١	What drives consumer decisions to adopt smart agent technologies?	The intelligent agent in various ways such as the intelligent recovery of user behavior and the recovery of cross-linguistic information leads to the strengthening of modern marketing practices. Adapting from representation theory, this article proposes a theoretical framework for the use of intelligent agents and argues that intelligent agents act as representations to facilitate primary goals. And it causes an economic advantage for your organization.
Johnson ٢٠٢٢	The effect of intelligent agents on increasing the performance of search engines	A suitable combination of information retrieval techniques and intelligent agent based on Internet of Things and cloud computing can improve information retrieval performance in a search engine while increasing efficiency. The amount of information available in networks and databases has increased rapidly, and with the

		intervention of intelligent agents, optimal use can be made in the performance of search engines.
Kridalukmana et al. ۲۰۲۲	Behavioral representation of an intelligent agent	By representing the behavior of the intelligent agent, it is possible to identify and analyze the reason for the perception and multiple behaviors of the intelligent agent in different situations. Behavioral representation of intelligent agents by means of decision tree, goal hierarchy, belief-desire-intention hierarchy and physical system network cannot reveal the intelligent agent's understanding in certain situations such as driving. To address this gap, this paper proposes a new behavioral representation based on artificial situational awareness to reveal the situations encountered by the intelligent agent based on smart contract platforms.
His war and colleagues ۲۰۲۲	The effect of customization, self-evaluation and information richness on trust in online insurance services (The role of the intelligent agent as a moderating variable)	This research examines the moderating effect of intelligent agents on customization, self-evaluation and information richness based on knowledge and network attitude. The results show that customization, self-evaluation and information richness have a positive and significant causal effect on trust in online insurance services. Also, intelligent agent positively moderates the relationship between self-evaluation, information richness and trust.
Water and water ۲۰۲۲	Designing an intelligent social agent to support mental health	The intelligent social agent with the help of intelligent digital support can become a completely digital therapist in the field of mental health while reducing human error. He should also know how to interact socially with people. One of the key components of this ability to display empathic behaviors is the intelligent agent.
Francis et al ۲۰۲۲	The effect of intelligent agents in establishing secure communication in the drone network	The use of Internet of Things, sensors, digital actors and intelligent agents is effective for the routing and localization of the drone network.
Lee Barker et al ۲۰۲۲	Fault detection in working conditions of intelligent agent-based chillers using deep learning model	In this article, chiller troubleshooting methods are proposed with the help of digital structure and intelligent agent. In this stage, performance data is collected, analyzed and decisions are made through the intelligent agent and the Internet of Things.
Yang et al ۲۰۲۲	Customer orientation and customers' willingness to use artificial intelligence service agents	Customers believe that AI service agents perform better than human agents. The research results of this study showed that in terms of security issues, customers preferred the use of artificial intelligence agent services that are less human-like.
Alkinani et al. ۲۰۲۲	Design and analysis of intelligent transportation logistics network	To analyze the efficiency of the data in the intelligent transportation logistics network, advanced techniques such as artificial intelligence should be used to make the transportation system intelligent. The intelligent logistics framework is built on a parallel neural network architecture known as Swarm-Neural Network (SWNN). The proposed SWNN model analyzes sensory data based on augmented and virtual reality and intelligently recognizes public transportation in networks.

Kaswan et al ۲۰۲۲	Integration of machine learning and basic reasoning system based on intelligent agents	This paper uses intelligent agent-based machine learning techniques to select the best suppliers and optimal data processing. The framework also integrates machine learning techniques with intelligent agents to improve the solving of highly complex problems.
Arshad Ali and Farooqi ۲۰۲۲	Investigating the interaction between several intelligent operating systems in web mining	It is more efficient to use multiple intelligent surrogate agents to design and simulate real-world scenarios. In this article, a knowledge-based framework is presented that can be useful in the age of Corona, with the help of the proposed algorithm in this framework, the knowledge base can be updated. Smart operating systems can be effective in web mining.
Mukherjee and Chitipaka ۲۰۲۲	Analysis of adoption of intelligent agent technology in food supply chain management	Smart agents are very effective in the food supply chain. The findings showed that several factors in TOE significantly contribute to the acceptance of IAT. This research presents a new paradigm for the adoption of this innovation in FSC. The TOE framework includes comparative advantage, reliability, complexity, cost, innovation acceptance, top management support, skilled employees, information technology awareness, environmental uncertainty, competitive pressure, information intensity and Identify supplier pressures that aid the adoption process.
Fatima co-workers ۲۰۲۲	Intelligent agent enhancement for multiple access protocols in wireless sensor networks	Wireless sensor networks play an important role in collecting data (including big data), performing calculations, and returning results to users. Wireless sensor networks have a positive and vital effect in strengthening the intelligent agent, and the intelligent agent can make decisions with its perceptions.
Kim and Song ۲۰۲۲	AI is safer for my privacy	The results of this research showed that when users are asked to provide their life information, they are worried about compromising their privacy. Users believe that the artificial intelligence agent has made their privacy more secure, but at the same time, they are always worried about the security of their information.
Ermai T and colleagues ۲۰۲۲	Intelligent agent-based framework for enhancing warehouse management systems	This article describes the design and development of warehouse management system based on intelligent agent. It also pushes the limits of the human operator.

Methodology

Considering that the current research seeks to identify and explain the intelligent agents of learning sales in sports start-ups and provide a model for it, in terms of the fundamental goal and in terms of the result, it is part of the exploratory research that was conducted using a qualitative approach. Also, due

to the novelty of the subject, the lack of knowledge and the need for development in Iran, the lack of theory in this field, and the lack of background answers to the research questions, the research method was of the foundation data type, which is an inductive method, that is, from part to whole. Foundation data theory was mainly developed and discussed by Glaser. They have defined this theory as follows: Discovery of theory based on data systematically collected and analyzed in a social research. In this method, the researcher does not start his research on the basis of a theory he already has in mind, but starts his activity in the field of reality and seeks for the theory to emerge from qualitative and real data. A theory derived from the data in this way is more likely to be close to reality than a theory constructed by throwing together a number of concepts based on mere speculation.

Qualitative sampling method

According to the type of research, the method used was purposeful and in the form of a snowball using Max Kyuda ٢٠ software. This is the way that the sample units provide information not only about themselves but also about other units of the society, and since the goal of collecting high-quality information is reliable, for this reason, samples are selected that are rich and can provide a reliable picture of the phenomenon under study. In qualitative research, the number of samples is determined by the theoretical saturation criterion, which means that when the researcher comes to the conclusion that conducting more interviews will not provide him with more information and is merely repeating the previous information, in this case the researcher stops collecting information.

Qualitative research data collection method

The method of data collection was in-depth interview. In this study, with the aim of collecting qualitative and real information, theoretical saturation was achieved in ١٦ people. Considering that ٤ main questions were considered in this research, the questions of the interview protocol were formulated in line with these questions. It should be noted that notes were taken during the interview. Also, if necessary, various explanations were provided to the interviewees before asking the questions.

Qualitative data analysis method

Strauss and Corbin method was used for data analysis. The researcher obtained the main essence of the obtained information by continuously comparing the data and writing word by word the text of the interviews, field notes and recorded cases and the processes of conceptualization, interpretation and theorization. Each interview was coded and analyzed before conducting the next interview. For this purpose, an open and central coding stage was carried out. The researcher was looking for the main variable and process in the data. Repeated examination and review of data, codes and classes that emerged, notes and diagrams noted during data analysis, as well as writing the main story, helped the researcher in determining the main variable of the research.

Open and axial coding

In open coding, concepts and categories are identified and their features and dimensions are discovered in the data, in other words, in this type of coding, concepts in interviews and documents are classified based on their relationship with similar topics. The purpose of axial coding is to create a relationship between the generated categories (in the open coding stage). This action is usually done based on the paradigm model and helps the theorist to carry out the theorizing process easily. The basis of communication in coding is based on the expansion of one of the categories. A core category (such as a central idea or event) is defined as the phenomenon, and other categories are associated with this core category.

Validity and reliability assessment

Guba and Lincoln proposed reliability as a criterion to replace validity and reliability in qualitative research, which consists of four more detailed concepts: reliability, transferability, verifiability and reliability (Guba and Lincoln, ۲۰۰۵).

Credibility or believability

It is the equivalent of validity in quantitative research, that is, the amount and degree of trust in the authenticity of the findings for the participants in the research.

Transferability or transferability

It is an alternative to external validity in quantitative research and it means the ability to generalize the research to other areas and similar fields.

Verifiability or verifiability

It means avoiding bias, but in quantitative research, it means the power of analysis and accuracy of data and their verification rate. It shows the effort of the researcher to achieve the objectivity index in the research.

Reliability

It is equivalent to reliability in quantitative research. It refers to the degree of recycling and reproducibility of data by other researchers.
In qualitative research, ۳ methods are used to ensure reliability:
*Using structured processes of convergent interviews
* Organizing structured processes for recording, writing and interpreting data
* The presence of at least two people to conduct interviews separately but parallel to each other and compare the findings of two or more researchers.

Reliability calculation with intrasubject agreement method

According to the opinions of these participants, the questions were examined and revised. In order to ensure the reliability of the findings, an effort was made

to clearly document the processes and decisions related to the research in the research text.
Be explained. Finally, regarding the verifiability of the results, the findings were compared with the background of the research and explained with reference to theoretical discussions. Also, in this research for the narrative review, the findings of the research were presented to the participants and the text of the theory was studied by them and their views were applied. At the end of the coding, this study was studied and reviewed by the professors and some points were made to correct or change the final theory. To calculate the reliability of the calculation with the within-subject agreement method of the two coders, a PhD student in statistics was requested to be a research associate (coder) in the necessary training and techniques for coding the interviews were transferred to them. In each of the interviews, codes that are similar from two males were identified as agreement and non-similar codes as disagreement. Then the researcher together with this research colleague coded the number of interviews and determined the percentage of agreement within the subject. The results of this coding are shown in the table below.

Research Findings:

Open-oriented and selective coding

In the selective coding of concepts and categories, their characteristics and dimensions are discovered in the data. This is shown in Table ٣:

Table ٣: Open-centered and selective coding

axis	Categories	Some concepts
Cause	Smart digital sensors	Smart sensors enable more accurate and automated collection of environmental data—with less error noise—among precisely recorded data. A smart sensor consists of at least one sensor, a microprocessor and a communication technology. The environment is observed by the intelligent agent through sensors.
Cause	Smart digital actors	It is also called a lever and it is one of the components of the machine that converts energy into motion. Operators are responsible for moving and controlling the system .
Cause	Augmented and virtual reality technology	In virtual reality, all the elements perceived by the user are created by the computer. In augmented reality, part of the information that the user perceives exists in the real world and part is created by the computer.

Cause	Internet of Things	The Internet of Things refers to the billions of physical devices around the world that are connected to the Internet and collect and share information with the user and other connected devices.
Cause	Cross-linguistic information retrieval	In cross-language information retrieval, by querying in one language, documents in different languages can be retrieved.
Cause	Smart data recovery	Airborne technique of data recovery in the form of software and hardware Delivering computing services such as servers, storage, databases, networks, software, analytics and information over the Internet to deliver faster innovation and flexible resources and economies of scale
Cause	cloud computing	Delivering computing services such as servers, storage, databases, networks, software, analytics and information over the Internet to deliver faster innovation and flexible resources and economies of scale
Cause	machine learning	Machine learning is about making computers smarter without directly teaching them how to behave The learning of these algorithms is done by imitating the way humans learn, and as the computer's experience increases, its accuracy gradually increases. .
Cause	big data	A term used to describe the vast amount of specialized structured and unstructured data and information that every business is increasingly inundated with.
Cause	knowledge architecture	It specifies the place and method of acquiring and transferring knowledge. Knowledge architecture includes both tacit knowledge and specific and concrete knowledge. The knowledge architecture is designed in such a way that it fully supports both the organization's business architecture and its information architecture. Knowledge architecture deals with how knowledge is created and applied and how the organization learns.

Cause	Organization of information/content/knowledge	Organization of information/content/knowledge is to enter a specific structure of content in a set of documents and present this structure to the user. These documents are available through the information retrieval system in response to the user's query
Cause	Smart digital support	Smart Information Technology, Digital Resource Management, Cyber Security, IT Security, Security Compliance, Smart Support, Data Analytics and Big Data, Digital Technology, Technology Equipment, Smart Data Warehouse, Application Management, Integrated Information Systems, Infrastructure Management
Cause	Network knowledge and attitude	Diversification, desire for change, risk-taking, belief in team work, elements at the same level, systemic view, Organizational realism, goal orientation, having network literacy, theoretical and conceptual support, acquiring management knowledge, understanding development, understanding change, standardization, scientific decision-making, clarifying the path to achieve goals, prioritizing tasks and tasks, standard recruitment procedure, creation, presentation and application Knowledge, strategic and strategic planning
Cause	Smart contract platforms	Smart contract platforms are a framework for building decentralized applications. These platforms are like an operating system, but instead of programs running on the operating system, blockchain and smart contracts act as the operating system and underlying framework.
Background factors	Specialized data quality criteria	Data quality is a measure to measure the correctness of the state of data based on factors such as accuracy, completeness, consistency, reliability and up-to-dateness. Other important aspects and dimensions of data quality: data completeness, data prevalence, data compliance.

Background factors	Product, customer, competitor and market data profiling	It is a powerful tool for profiling .NET applications. This tool is able to determine the amount and manner of using the processor, I/O and memory at the program level. This tool provides the ability to profile large and voluminous programs with minimal additional load (zero). It is possible to integrate the tool with the production environment.
Background factors	Modeling processes and determining critical processes	Process modeling captures processes and interactions between different departments and displays a clear picture of current processes. Process modeling helps identify backlogs and bottlenecks and creates a better and more efficient process.
Intervening factors	Technological infrastructure, learning, sharing and knowledge sharing	Infrastructures for the effective use of technological knowledge, organizational capacity, areas for creating technological capabilities and capabilities, the accumulation pattern of technological capabilities, capabilities based on interactions and networks, equipment-based capabilities, engineering capabilities and project implementation, levels of technological capabilities, the necessity of convergence of scientific and technological capabilities , the structure of division of labor and convergence in the network, strategic and strategic planning, the ability to influence and influence, the ability to transform and create positive changes, networking skills, behavioral skills, human skills, communication skills, information skills, quick decision-making, the experience of operational experiences of contingent decision-making, Recognizing the time of change and transformation
Intervening factors	Big data management capabilities	Big data management allows the integration of different types of data so that managers can transform information for human consumption. Data is stored, processed and analyzed to uncover new insights with analytics, often with the help of artificial intelligence (AI) and machine learning. .

A central phenomenon	Smart learning agent for sales of sports startups	This system allows them to learn and then use their acquired knowledge to achieve their goals. The intelligent agent of the environment knows its surroundings and performs actions on the environment, and all the actions it performs are aimed at achieving its goals. It observes its surroundings through its receptors and sensors and acts in that environment through its organs.
Strategy	Robotic automation of processes	Completing boring daily processes, reducing manual tasks, focusing on issues without the need for complex decision-making, no need for special coding, reasonable cost, less employee resistance, organizations focusing on automation
consequence	Increase sales and market share	Determining smart goals, increasing market share, correct valuation, meeting customer needs. Characterization of customers, giving gifts instead of discounts, communication with customers. Using a variety of new advertising methods
consequence	Organizational agility	Moving fast, nimble, active and agile is the ability to move quickly and easily and to be able to think quickly and in an intelligent way.
consequence	Economic advantage	Reducing time in the implementation and monitoring of sales and service agreements, reducing additional costs
consequence	Competitive advantage	The amount of appropriate interactions in competitive conditions, differentiation in features to provide better services than competitors, superiority of capabilities over competitors, providing value to customers that is not offered by potential and actual competitors.
consequence	Automatic execution of processes	Making processes more efficient and effective, facilitating monitoring and management, helping decision-making, creating continuous improvement of processes, improving customer services, replacing or controlling human tasks by automating activities, increasing transparency and speed of information flow, providing more

		valuable services and products to customers.
consequence	Reduce human error	The need to prevent the occurrence of human errors due to the size of the system, physical fatigue, inappropriate physical conditions and the lack of time necessary to do a task. - The need to prevent the occurrence of human errors due to the pressure on the operator to perform correct, accurate and safe work
consequence	Improve communication	Attention to the communication system that establishes communication and exchange messages
consequence	Customer retention in competitive conditions	Differentiating the product from competitors, retaining the customer, paying attention to the customer as a loyal customer
consequence	Increase efficiency	Smart contracts are much easier to move, transfer and send than traditional contracts. It is not necessary for both parties to be present in the same place to sign the contract. Smart contracts help the transaction parties to save time

Research paradigm model

Based on the open, central and selective coding, the research paradigm model was presented in Figure No. ١:

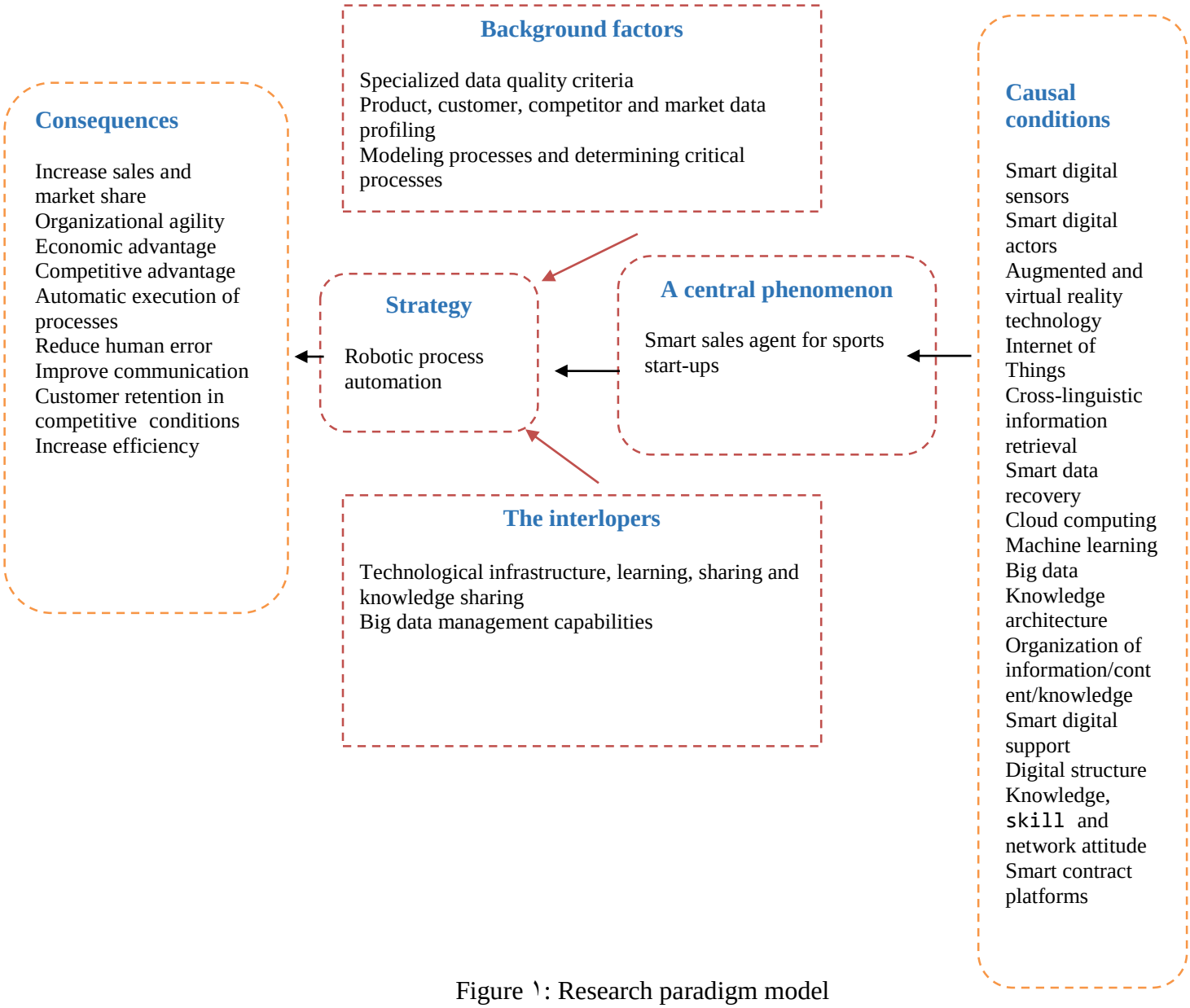

Figure ١: Research paradigm model

Discussion and conclusion

The purpose of this research is to present the model of the intelligent sales learning agent in sports start-ups using the foundation data method. Sports startups have positive effects on the society by providing innovative solutions and will improve sports facilities and services in the future with the development of technology and innovation. The sports startup can be

considered a fledgling startup that aims to achieve big goals with the aim of developing sports and supporting domestic manufacturers. One of the great advantages of this site is the free registration of advertisements for the sale of sports goods, as well as the scope of this site. You can know the whole country because you can register ads and buy and sell in all cities.

One of the most important success factors of sports startups is its specialization. Kala Sports can be considered one of the most specialized sports startups because their only field of activity is sports goods. And this shows that they have expertise in this matter, they have been able to create a direct relationship between the buyer and the seller by removing the middleman, which can be considered a great advantage, on the one hand, due to having a professional team in building this startup. It is possible to appear in the first Google search results by promoting any title, which increases visits. The intelligent learning agent chooses what action to perform at any moment based on his scientific and experimental knowledge (Ab and Jamili, ۲۰۲۲).

It should also be noted that the choice of an agent's action at any moment can depend on the entire sequence of perception up to that moment and is not related to what has not been received yet (Francis and Daniel, ۲۰۲۲). In this study, a paradigm model was prepared that the most important antecedents affecting the intelligent sales learning factor in sports startups include smart digital sensors, Intelligent digital actors, augmented and virtual reality technology, Internet of Things, cross-linguistic information retrieval, intelligent information retrieval, cloud computing, machine learning, specialized big data, knowledge architecture, information/content/knowledge organization, intelligent digital support, digital structure, knowledge , networked knowledge and attitude were smart contract platforms. The current research led to the presentation of a paradigm model with the title of intelligent sales learning agent in sports start-ups using the data foundation method.

Smart digital sensors are one of the key drivers identified. A smart digital sensor is a device that detects environmental changes digitally and intelligently and sends information to other devices. The environment is observed by the intelligent agent through these sensors. Among the other important identified precursors are intelligent digital actuators, which are considered important components of the machine, in fact, the actuators convert energy into movement. Also, the operators are responsible for moving and controlling the system in an intelligent way (Su Vechen, ۲۰۲۲).

Augmented and virtual reality technology is one of the other identified precursors. In augmented reality, the original value of the existing reality is preserved and its sensitive information is covered by computer productions. In this way, a live physical representation is added, directly or indirectly, to the elements of the real world of people. Surrounding elements are mainly received by sensors and processed by computer (Nandi et al., ۲۰۲۲).

Then the computer productions are mixed with environmental elements with an interactive interface, so that it is perceived as a real world. Along with augmented reality technology, there is virtual reality technology. This technology interacts by creating a virtual environment in front of the user's eyes

and based on the movement of the head and body of that virtual environment (Tranfia Vali Chia, ۲۰۲۲). Data recovery is one of the other identified antecedents, which can be defined as the process of obtaining information that has been lost due to digital media damage. Information recovery centers are able to interpret the logical structure of storage (Brandsen et al., ۲۰۲۲).

Another recognized precursor is big data. Big data is a term used to describe the large amount of structured and unstructured data and information that every business is increasingly inundated with. In the field of Big Data, the amount of information is not important, but the process and set of operations that take place on the existing data are of great importance. The use of big data and their analysis has increased the insight of business owners, which ultimately leads to better decision making and choosing a better business strategy (Peppe Duplass et al., ۲۰۲۲).

Organization of information/content/knowledge is one of the other important antecedents, which consists of entering a specific content structure in a set of documents and presenting this structure to the user. These documents are available through the information retrieval system in response to the user's query. Information organization, as a field of study, is related to the nature and quality of the process with knowledge organization systems, which are used to organize and represent documents and concepts (Al-Shorideh et al., ۲۰۲۲).

Another identified precursor is the Internet of Things. In the Internet of Things paradigm, many objects that surround us are in one or more forms on the network. Sensor network technologies are increasing to meet this new challenge where invisible information and communication systems are embedded in our surroundings (Francis et al., ۲۰۲۲). This produces a large amount of information that must be stored, processed and presented in an integrated, efficient and easily interpretable format. Cloud computing can provide a virtual infrastructure for such computing that integrates monitoring devices, storage, analysis tools, and visualization platforms (Fissinam et al., ۲۰۲۲).

Robotic process automation is the strategy identified in this model. The purpose of robotic process automation is to improve business processes in the organization. is an emerging technology that can be used to automate high-volume but low-value repetitive tasks. By automating and optimizing tasks, increasing the quality of work and reducing errors and risks in processes, it increases productivity in business (Dogek, ۲۰۲۲). Data profiling means a general look at the shape and structure of data, which was identified as one of the important contextual factors (Albaq Hazari et al., ۲۰۲۲).

Data management capabilities were identified as an important intervention factor in the model. Data management is an administrative process that includes the acquisition, validation, storage, protection and processing of data (Lee Barkrohamkaran, ۲۰۲۲). The main factor in maintaining a competitive advantage in any data-driven industry is the organization's data management capabilities. In addition, data management is an important part of the use of information technology systems that provide analytical information for operational decision-making and strategic planning by managers (Hendriati et

al., ۲۰۲۲). Finally, the variables of increasing sales and market share, organizational agility, economic advantage, competitive advantage, automatic implementation of processes, reducing human error, improving communication, keeping customers in competitive conditions and increasing efficiency were identified as important outcomes.

References

Alshurideh,M. Akour,I. Al-Hawary,S. (۲۰۲۲). The effect of digital marketing capabilities on organizational ambidexterity of the information technology sector, International Journal of Data and Network Science, Volume ٦ Issue ۲, PP ٤٠١-٤٠٨. https://doi.org/ ١٠,٥٢٦٧/j.ijdns.٢٠٢١,١٢,٠١٤

Abu Hadba,SY,Nafea,I. (۲۰۲۱).An Intelligent Agent Model and a Simulation for a Given Task in a Specific Environment, American Journal of Artificial Intelligence, Volume ٥, PP ١-١٦https://doi.org/١٠,١١٦٤٨/j.ajai.٢٠٢١٠٥٠١,١١

Azizi,AA. Farif Jemili,M. (۲۰۲۲).Conceptual Design of a Socially Intelligent Agent with Triadic Empathy and Theory of Mind for Mental Health Support,journal of human center technology,PP٢٨-٣٩.https://doi.org/١٠,١١١١٣/humentech.v١n١,١٢.

Alkinania,MH. AliAlmazroib,A. Adhikaric,M. Menond,VG. (۲۰۲۲).Design and analysis of logistic agent-based swarm-neural network for intelligent transportation system, Alexandria Engineering Journal, Volume ٦١, pp ٨٣٢٥-٨٣٣٤. https://doi.org/١٠,١٠١٦/j.aej.٢٠٢٢,٠١,٠٤٦

Ali,A. Mohd. Faizan Farooqui,M. (۲۰۲۲).Interaction among Multiple Intelligent Agent Systems in web mining, International Conference for Emerging Technology (INCET),pp٢٥٣-٢٦٨.https://doi.org/١٠,١١٠٩/INCET٥٤٥٣١,٢٠٢٢,٩٨٢٤٣٤٤

Brandsen,A. Verberne,S. Lambers,K.Wansleeben,M. (۲۰۲۲). Can BERT Dig It? Named Entity Recognition for Information Retrieval in the Archaeology Domain, Journal on Computing and Cultural Heritage,pp٤٥٢-٤٧٣.https://doi.org/١٠,١١٤٥/٣٤٩٧٨٤٢

Binos,T. Bruno,V. (۲۰۲۲).Intelligent agent based framework to augment warehouse management systems for dynamic demand environments,

Australasian Conference on Information Systems,PP۱۹۸-۲۱٦.https://doi.org/۱۰,۳۱۲۷/ajis.v۲۵i۰,۲۸٤٥

Chen,S.Wenting, C. (۲۰۲۲). Advanced Sensing Materials for Internet of Things Sensors,journal of sensors,pp٦۸-۷٤.https://doi.org/۱۰,۱۱٥٥/۲۰۲۲/٦۲۲۸٤٤۰

Doguc,O. (۲۰۲۲).Robot Process Automation (RPA) and Its Future, IGI Global's Online Bookstore Extended,PP۲٦۹-۲۸۷. https://doi.org/ ۱۰,٤۰۱۸/۹۷۸-۱-٦٦۸٤-۳٦۹٤-۳.ch۰۰

Eddine Elbaghazaoui,B. Amnai,M. Fakhri,Y. (۲۰۲۲). Data Profiling and Machine Learning to Identify Influencers from Social Media Platforms, Journal of ICT Standardization,PP۳٦۹-۳۸۲.https://orcid.org/۰۰۰۰-۰۰۰۲-۳۲۰٦-٥۱٦۲

Francis,V. Francelin,S. Daniel,J. Velliangiri,S. (۲۰۲۲).Intelligent agent and optimization-based deep residual network to secure communication in UAV network,international journal of intelligent systems,PP٦۸-۸۲. https://doi.org/۱۰,۱۰۰۲/int.۲۲۸۰۰

Guba, E. G., & Lincoln, Y. S. (۲۰۰٥). Paradigmatic Controversies, Contradictions, and Emerging Confluences. In N. K. Denzin & Y. S. Lincoln (Eds.), The Sage handbook of qualitative research ,pp. ۱۹۱–۲۱٥.

Hassanzadeh, Mohammad. (۲۰۲۱). The fifth revolution of data, the irreplaceable role of intelligent agents and the necessity of the National Organization of Data, Science and Information Management Techniques, Autumn - Number ۲٤ Scientific-Research Rank (Ministry of Science), Volume ۷, Number ۳, Page ۷-۱٦.

Hassanzadeh, Mohammad, Mohammadkhani, Arash. (۲۰۱۸). A review of intelligent agents and their role in library services, Paik Noor - Human Sciences, Summer, Volume ٦, Number ۲ (Library and Information), page ٤۲-٥۲.

Hendriyati,P. Agustin,F.Rahardja,U.Ramadhan,T. (۲۰۲۲). Management Information Systems on Integrated Student and Lecturer Data, APTISI Transactions on Management,pp٤٥۸-٤۷۱.https://doi.org/۱۰,۳۳۰٥۰/atm.v٦i۱,۱٥۲۷

Hamdi Ben, A. Byrns,A. Frasson,C. (۲۰۲۱).Optimizing Alzheimer's Disease Therapy Using a Neural Intelligent Agent-Based Platform, International Journal of Intelligence Science,PP۳۲۱-۳٤۳.

https://doi.org/١٠,٤٢٣٦/ijis.٢٠٢١,١١٢٠٠٦

Jungwon,K.Yongjun,S. (٢٠٢٢). Artificial Intelligence Is Safer for My Privacy: Interplay Between Types of Personal Information and Agents on Perceived Privacy Risk and Concerns,Cyberpsychology, Behavior, and Social NetworkingVol. ٢٥,PP٥٨٧-٦١١. https://doi.org/١٠,١٠٨٩/cyber.٢٠٢١,٠٠٧٦

Jyh-Jeng,W.Haider,KH. Shu-Hua,Ch. Chi-Hsiang,W. (٢٠٢٢).Effect of customization, core self-evaluation, and information richness on trust in online insurance service: Intelligent agent as a moderating variable,Asia Pacific Management Review, Volume ٢٧, Issue ١, PP ١٨-٢٧. https://doi.org/١٠,١٠١٦/j.apmrv.٢٠٢١,٠٤,٠٠١

Khan Mohammadi, Mohammad. (٢٠٢١). Investigating the obstacles to the use of intelligent agents in independent auditing, Accounting and Management Perspectives Journal, Spring, Volume ٤, Number ٣٨ - Serial Number ٣٨, Page ١٠٠-١١٤.

Kridalukmana,R. Eridani,D. Septiana,R. Rochim,AF. Setyobudhi,CHT. (٢٠٢٢).Artificial Situation Awareness for an Intelligent Agent, International Joint Conference on Computer Science and Software,PP٤٧-٦٣.

https://doi.org/١٠,١١٠٩/JCSSE٥٤٨٩٠,٢٠٢٢,٩٨٣٦٢٨٢

Kaswan,KS. Dhatterwal,JS. Balyan,A. (٢٠٢٢).Intelligent Agents based Integration of Machine Learning and Case Base Reasoning System International Conference on Advance Computing and Innovative Technologies in Engineering,pp https://doi.org/ ١٠,١١٠٩/ICACITE٥٣٧٢٢,٢٠٢٢,٩٨٢٣٨٩٠

Mukherjee,S. Chittipaka,V. (٢٠٢٢).Analysing the Adoption of Intelligent Agent Technology in Food Supply Chain Management, IGI Global's Online Bookstore Extended,pp٢٥٨-٢٧٩. https://doi.org/١٠,١١٧٧/٢٣١٩٧١٤٥٢١١٠٥٩٢٤

Mariapina,T.Maria Della,L. (٢٠٢٢). Innovating the cultural heritage museum service model through virtual reality and augmented reality: the effects on the overall visitor experience and satisfaction, Journal of Heritage Tourism, pp١-١٩. https://doi.org/١٠,١٠٨٠/١٧٤٣٨٧٣X.٢٠٢٠,١٨٥٠٧٤٢

Moussawi,S. Koufaris,M. Benbunan-Fich,R. (٢٠٢٢).The role of user perceptions of intelligence, anthropomorphism, and self-extension on

continuance of use of personal intelligent agents, European Journal of Information Systems,PP۲۲-٤۱. https://doi.org/۱۰,۱۰۸۰/۰۹٦۰۰۸٥X.۲۰۲۱,۲۰۱۸۳٦٥

Majidha Fathima,KM. Santhiyakumari,N. Suganthi,M. (۲۰۲۲).Augmentation of Intelligent Agent for Multiple Access Protocols in Wireless Sensor Networks, Second International Conference on Artificial Intelligence and Smart Energy,PP٦۱-۷۸. https://doi.org/۱۰,۱۱۰۹/ICAIS٥۳۳۱٤,۲۰۲۲,۹۷٤۲۹٤٤

Nandy,S. Adhikari,M. Chakraborty,S. Alkhayyat,A. Kumar,N. (۲۰۲۲).Intelligent Agent-based Internet of Medical Things framework for detecting brain response from Electroencephalography signal using Bag-of-Neural Network, Future Generation Computer Systems, Volume ۱۳۰, May ۲۰۲۲, PP ۲٤۱-۲٥۲. https://doi.org/۱۰,۱۰۱٦/j.future.۲۰۲۱,۱۲,۰۱۹

Nami, Mohammad Reza, Kamali Dehghan, Maleeha, Abbasi, Mehsa, Farsi, Elham. (۲۰۱۸). The role of intelligent agents in improving electronic government activities, Majlisi Electrical Engineering, Winter, Volume ۲, Number ٤, Page ۳۷-٤۲.

Orlando Philco,L. Marrone,L. Estupiñan,E. (۲۰۲۱).MiA-CODER: A Multi-Intelligent Agent-Enabled Reinforcement Learning for Accurate Coverage Hole Detection and Recovery in Unequal Cluster-Tree-Based QoSensing WSN, Applied Sciences,pp۱۱۳-۱۲۹. https://doi.org/۱۰,۳۳۹۰/app۱۱۲۳۱۱۱۳٤

Papadopoulos,TH.Prakash Singh,S. Spanaki,K.Gunasekaran,A. Dubey,R. (۲۰۲۲). Towards the next generation of manufacturing: implications of big data and digitalization in the context of industry, Production Planning & Control, PP ۱۰۱-۱۰٤. https://doi.org/۱۰,۱۰۸۰/۰۹٥۳۷۲۸۷,۲۰۲۰,۱۸۱۰۷٦۷

Phasinam,KH. Kassanuk,TH. Shabaz,M. (۲۰۲۲). Applicability of Internet of Things in Smart Farming, Journal of Food Quality,PP٤٤-٦۱. https://doi.org/۱۰,۱۱٥٥/۲۰۲۲/۷٦۹۲۹۲۲

Pengcheng,L. Burkay,A. Xu,Z. Xinqiao,J. Zhimin,D. (۲۰۲۲).Across working conditions fault diagnosis for chillers based on IoT intelligent agent with deep learning model, Energy and Buildings, Volume ۲٦۸,PP۱۲-۳۲. https://doi.org/۱۰,۱۰۱٦/j.enbuild.۲۰۲۲,۱۱۲۱۸۸

Rin Shim,H. Gwan Kim,B. (۲۰۲۰).The Effect of Customer Value on User Satisfaction With Dialogue Characteristics of Apple's Intelligent Agent Siri, Journal of Organizational and End User Computing (JOEUC),PP۲۸-٤٦.

https://doi.org/۱۰,٤۰۱۸/JOEUC.۲۰۲۰۰۱۰۱۰٤

Rin Shim,H. Gwan Kim,B. (۲۰۲۰).The Effect of Customer Value on User Satisfaction With Dialogue Characteristics of Apple's Intelligent Agent Siri, Journal of Organizational and End User Computing,PP۱۷-۳٦.

Sidlauskiene,J. (۲۰۲۱).What Drives Consumers' Decisions to Use Intelligent Agent Technologies? Journal of Internet Commerce,pp۸-۲۲. https://doi.org/۱۰,۱۰۸۰/۱٥۳۳۲۸٦۱,۲۰۲۱,۱۹٦۱۱۹۲

vafadar, Shiva, Abdulzadeh Barforosh, Ahmed. (۲۰۲۱). Reliability analysis patterns of learning in intelligent software agents, Electrical Engineering and Computer Engineering of Iran, Fall, Volume ۹, Number ۳, Page ۱۱۹-۱۳۲.

Vinnarasi,F.Jesline,D. (۲۰۲۲).Intelligent agent and optimization-based deep residual network to secure communication in UAV network, International jouranal of intelligent sestems, Volume۳۷, Issue۹, PP ٥٥۰۸-٥٥۲۹. https://doi.org/۱۰,۱۰۰۲/int.۲۲۸۰۰

Yang,Y. Yue, L. Xingyang,L. Jin, A. Yifan,L. (۲۰۲۲).Anthropomorphism and customers' willingness to use artificial intelligence service agents, Journal of Hospitality Marketing & Management, Volume ۳۱,PP۱۲-۳٥.