



## Prioritizing the advantages of using Parachin technology and Presenting a Model for Using this Technology in the Banking Industry Using Theme Analysis

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### ABSTRACT

Parachin can be considered a type of blockchain network that is a special structure for data and information management. The use of parachins is smart contracts provided by projects that enable Ethereum developers to transfer their contracts to Poolkadat. Blockchain-based projects are created in order to achieve goals such as security, scalability, and decentralization. These three features are very difficult to achieve simultaneously, however, Polkadot and Kusama are projects that strive to achieve every day. In addition, the Polkadot ecosystem (a kind of multi-chain, scalable technology that provides connections between different blockchain platforms) provides a place for projects to benefit from specific use cases. The purpose of this study is to prioritize the advantages of using Parachin technology and to provide a model for using this technology in the banking industry by using theme. The present study is applied in terms of purpose and in terms of quantitative-qualitative implementation method, Friedman method and theme analysis. The research population includes experts and experts in the field of banking. The sample of the research was determined according to theoretical saturation of data in the qualitative research of 10 people. Accordingly, the number of questionnaires was used by 50 people to analyze the data using SPSS software, according to the obtained results, the indices (scalability, 6.40) and (rent the slot 2.64) had the highest and lowest ranks, respectively.

**Keywords:** Parachin, Blockchain, Smart Contract, Poolkadat, Kusama, Banking industry, theme analysis



## 1. Introduction

With the increasing growth of e-commerce transactions in the world and the need for the presence of banks to transfer financial resources, e-banking is an integral part of e-commerce and has an essential role in its implementation. It is safe to say that without e-banking, e-commerce will not happen. Since 2017, the field of e-commerce has welcomed a new generation of electronic contracts called smart contracts. These contracts have a wide role in establishing the ownership rights of individuals due to the conclusion in the context of blockchain. The application of these contracts in the legal system of countries in various respects such as expansion of exchange security, scalability, immutability, transparency and return of exchanges leads to the establishment of property rights of individuals. The mechanism of the conclusion of these contracts is also used in the allocation of license for the use of digital signatures and the acquisition of virtual currencies, the traded property as smart assets and the prediction of special mechanism in cases of breach of contractual terms, contractual conditions, contractual obstacles and resolving Disputes are among the reasons for the establishment of property rights. These contracts require some infrastructure to be implemented in the legal system of countries and face challenges (Mozaffari and Nasser, 1397: 271). In the world of cryptocurrencies, there are numerous updates, especially in the area of blockchain. These updates and innovations are usually very complex and are aimed at speeding up and creating a working network. One of the most interesting examples in this area is Parachains. This concept is relatively new, however today it has attracted the attention of many projects to themselves. Entangled As a general rule, blockchain-based projects are created to achieve goals such as security, scalability, and decentralization. These three features are very difficult to achieve simultaneously, however, Polkadot<sup>1</sup> and Kusama are projects that struggle to achieve every day. In addition, the Polkadot ecosystem<sup>2</sup> (a <sup>3</sup>kind of multi-chain, scalable technology that provides connections between different blockchain platforms) provides a place for projects to benefit from specific use cases. For

example, there is a parachain platform for decentralized social networks resistant to Internet of Things censorship and a futuristic open-source robotic solution that robots use to create a platform for their own devices. As a service for end-users, it connects with a decentralized system that monitors <sup>4</sup>their activities globally. Therefore, the use of parachains is smart contracts provided by projects that enable Ethereum developers to transfer their contracts to Poolkadat. Decentralized Diff applications (popular) and open a large number of developers. The Polkadot ecosystem now includes a smart contract platform and a community-led platform that reflects Ethereum accounts, keys, subscriptions and reports. Polkadot and Kusama use multi-chain technology that allows for improved collaboration between blockchains. Thanks to this technology, different blockchains can work continuously together and take a step forward in decentralizing the network. Polkadot and Kusama allow various projects to create their own blockchains with any application and feature in the world. The concept of parachain refers to a secondary blockchain network. This secondary network, called the China Railroad or Relay Chain, is integrated into the main blockchain network, and the relay chain is located in the center, and the parachains move parallel to the relay chain. A parachain is maintained by a node with collector nodes. A collector acts as a complete node of the parachain, and is responsible for preserving all necessary information from the parachain. Parachains are customizable. This feature means that the owner of a parachain can decide how to make the network structure fit his or her intended application. In addition, he can also control the governance of the network. Due to the growth of e-commerce globally and the use of blockchain and parachain technologies in the banking and smart contracts industry, in this research, the reasons and advantages of using Parachain in the banking industry have been prioritizing and the pattern of using this technology. In the course of the research, these questions will be answered; <sup>5</sup> <sup>6</sup>

- 1) What are the advantages of using Parachain technology in the banking and transaction industry?

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<sup>3</sup>.parachain

<sup>2</sup> KSM

<sup>3</sup> Polkadot

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<sup>4</sup> IOT(Internet of Things)

<sup>5</sup> Dapp

<sup>6</sup> Relay Chain

- 2) What is the priority of the benefits of Parachain technology?

## Theoretical Foundations

### Parajin Technology

Parachain can be considered a type of blockchain network that is a special structure for data and information management that runs in parallel in the Polkadot ecosystem (in both Polkadot and Kusama networks). Except that by connecting to the central network, you don't need to define separate nodes<sup>7</sup> (Tomic et al., 2020).<sup>8</sup>

### Blockchain Technology

Blockchain is a new technology that will increase productivity and globalization in various sectors (Sadokaia, 2017). This technology is an encrypted digital ledger that stores transaction data in a decentralized ledger. To create an immutable chain, these blocks are added to each other in order when the chain is shared among all participants. Such an architecture has benefits such as improved traceability and increased trust in a supply chain (Cambel et al., 2019; Perbulli et al., 2018). Blockchain reduces reliance on third parties with peer-to-peer networks. To reduce fraud, this technology makes information immutably available to all participants (Wang et al., 2019). Blockchain is a<sup>9</sup><sup>10</sup><sup>11</sup><sup>12</sup> developed data structure that is replicated and shared among members of a network. Blockchain is constructed using cryptography. Each block is identified by its own cryptographic hash and each block refers to the hash of its previous block. This link between the blocks creates a blockchain. 2).<sup>13</sup>

Blockchain technology reduces the role of intermediaries, maintains transaction integrity and enhances traceability of production and logistics activities. Also, consistently, transactions with digital blocks are verified and stored and linked to previous blocks, thus forming a chain that facilitates information transparency. The distribution of the same information across the entire network is made possible by the non-centralization feature of the

blockchain, and no single node can control transactions. This structure has a permanent stamp and prevents any attempt to modify and modify the information without the approval of all stakeholders. This creates a collective responsibility to ensure data safety and reliability (Venkatesh et al., 2020<sup>14</sup>).

### Smart Contracts

Smart contracts are one of the most efficient and effective tools for entering the global markets. Smart contracts are signed under the supervision of artificial intelligence in the context of blockchain and instead of contracting them are smart assets or digital cryptocurrencies. The intention element is considered as one of the pillars of the formation of any contract in legal systems, and its expression and approval is the necessary condition for the formation and execution of any contract. The validity of these contracts is also Depends on proving the possibility of obtaining the intention element in a reliable and original way. The intention of the actors in smart contracts is expressed through the license assignment mechanisms of the use of digital signatures, the authorization mechanisms of the use of virtual currencies, and mechanisms of possession of information systems (Rashvand Boukani and Nasser, 2019).

### Parachain and Smart Contract Applications for the Internet of Things

Contrary to what many people think, the use of Parachain technology is not limited to cryptocurrencies such as bitcoin and is used in many areas, including the Internet of Things. The Internet of Things (IoT) represents the relationship between devices and the Internet through embedded software and sensors to communicate, collect and exchange information of devices with each other. Blockchain and the Internet of Things are both emerging and growing and they have a long way to go toward full adoption by users and companies. Just like the Internet of Things blockchain takes a lot of time and energy to gain acceptance from companies. The lack of use of most IoT devices from authentication standards has led to hackers being able to penetrate those devices and systems widely, so authentication and standardization is essential in all parts of the Internet of Things. Blockchain can be a solution to address some of the security problems. Oriee and Associates (1401)

<sup>14</sup> Venkatesh,et.al

<sup>7</sup> . Parachain

<sup>8</sup> .Tomic et al

<sup>9</sup> . Sadouskaya

<sup>10</sup> . Kamble,et.al

<sup>11</sup> . Perboli,et.al

<sup>12</sup> . Wang,et.al

<sup>13</sup> Hash

### **The potential impact of parachin and smart contracts on industry and society**

Blockchain, known as distributed ledger technology, is now ubiquitous. This technology and its applications are increasingly being considered as a means of achieving operational efficiency and reducing costs for the financial services industry. Although this new technology sounds exciting, some of its elements, such as smart contracts, are still in the early stages of development. In the current legal community, there is a lack of law and a lack of clarity about what a smart contract is, the future of the smart contract in the blockchain industry and its role in the financial services market, as well as how it relates to current legal standards for documents (Gortzel et al., 2017<sup>15</sup>).

#### **Smart Contract Platforms**

Below, we'll explore some of the most widely used platforms for developing and implementing smart contracts on the blockchain:

Ethereum<sup>16</sup>: Smart contracts are written in a programming language called [Solidity](#) and run by an Ethereum virtual machine. It is currently the most popular.

Hyperledger: <sup>17</sup>An open source system developed by the Linux Foundation that is not a cryptocurrency, but rather a flexible platform on which smart contracts can be developed.

<sup>18</sup>Transaction: This platform combines data into Bitcoin transactions, i.e. it uses the cryptocurrency blockchain and allows contracts to be developed on it.

Polkadot: An alternative to blockchain and is famous for its ability to host parachains, on-chain chains, which allow for more transactions than usual (Financial Market Analysis and Training Site, 1401).

#### **Applications and Uses of Parachin**

One of the biggest problems facing blockchains in the cryptocurrency market is their low scalability. Sometimes solutions that were offered to increase scalability eliminated the decentralization of these blockchains. But buying Polkadot is a decentralized way to increase scalability on blockchains. This is

because parachins operating parallel to the original blockchain allow for multiple transactions in parallel.

Another use of Parachin is its use in decentralized finance or DEFA. <sup>19</sup>Creating an alternative system for traditional financial systems is one of the main goals of Parachin. While Parachins provide solutions for controlling and managing digital assets. They offer solutions for buying, selling and transferring assets in the financial system.

It is quite natural that after all this, smart contracts are another use of Parachin. Smart contract projects sometimes force Ethereum developers to transfer their contracts to the Polkadot network. In this case, it is possible to implement these contracts for Polkadot as well.

In general, Parachin, CrossChin, and so on are among the technologies that work to facilitate collaboration between blockchain networks and have various applications. For example, other applications of this technology include Oracles, Blockchain-based games, digital currency vaults, Internet of Things affairs, and authentication and certificates (mihanblockchin.com).

#### **How Parachins Work**

Each parachin can be built by its own consensus and governance. This means that it can have its own characteristics and be optimized to suit individual needs. Most parachins are built using the relay chain, which is a framework that fits a given scale allowing blockchains to be built within hours with the specified specifications.[1] Since railroad can be connected to other blockchains using bridges or bridges. Any blockchain based on it can easily connect to other networks such as Bitcoin or Ethereum.

### **Research Background**

Johnny and Liberated (1400) The transformation of the service sector in the context of smart contracts of blockchain technology was investigated. The results showed that this context is very influential on services, especially financial services, and since most of the labor force in Iran is employed in the service sector, the importance of this issue is doubled. This is because this technology has high security and a significant reduction in the cost Bureaucratic and archival services are transforming the service sector

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<sup>15</sup> . Goertzel et al

<sup>16</sup> Ethereum

<sup>17</sup> Hyperledger

<sup>18</sup> Transactions

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<sup>19</sup> Defi

and eliminating many services units in favor of the people to replace new service jobs.

- Hua et al. (2020) explored the uses, opportunities and challenges of blockchain-based smart contracts. They argued that blockchain is one of the most disruptive technical innovations in the recent computing paradigm. Many applications that are already very difficult and complex are fortunately improving services with the blessings of blockchain and smart contracts. This research explores important applications that have already benefited from smart contracts. It also highlighted the future potential of blockchain-based smart contracts in the vision of these applications<sup>20</sup>.

In 2012, a study titled "The Application of E-Commerce in Business Applications: Problems and Perspectives" by Sarathi et al. stated the advantages and disadvantages of e-commerce: An electronic intermediary that generates revenue on demand, can be demanding in maintaining security management and management.

## Research Materials & Methods

The present research is applied in terms of purpose and qualitative and nonparametric in terms of implementation method. The research population includes experts and experts in the field of banking. The sample of the research was determined according to the theoretical saturation of data in qualitative research and sampling and based on this number of interviews with 10 people and questionnaires 50 people were completed. 50 of them were randomly selected, and Cochran's formula was used to estimate the sample size.<sup>22</sup>Cronbach's alpha method is used to measure the reliability of the research.The data collection tools in this research are questionnaires and interviews. Data analysis in qualitative part is done in the form of data coding and theme creation. At first, the total topics discussed in interviews are generally categorized according to the studied areas and then in the form of eight main pillars.

<sup>20</sup> DTI(Disruptive technical innovations)

<sup>21</sup> Sarathi et al  
 $-22 n^{\circ} = Z^2 S^2 / d^2$   
 $n = n_1 / 1 + n_2 / N$

## Research Findings

In this study, qualitative data has been implemented in several stages:

- 1) familiar with data.
- 2) Generation of basic codes (extraction of concepts from semantic expressions)
- 3) Searching for them.
- 4) Reviews of them.
- 5) Complimentary themes.
- 6) Final analysis and analysis.

Theme analysis is a method used to analyze qualitative data. Theme analysis is a method that employs an appropriate and flexible approach to analyzing qualitative data. Thematic analysis is a method for identifying, analyzing and reporting patterns within data. Each theme contains a major topic about data that relates to the research question. In order to determine what is considered a theme, a researcher's judgment is essential. There is no theme in the analysis, but the researcher must first select the patterns of meaning and topics he wants from the data, then identify and analyze the patterns by coding in the initial stage and repeating the process between the data set and the encoded summaries. Codes are features of data (semantic or content) that seem interesting for analysis. Codes together and together form themes. Thematic analysis aims to identify themes, i.e., patterns in important or interesting data of the researcher, and use these themes to answer research questions or to say something about a problem.

## Theme Analysis Method

### Familiarity with data.

The first step in any qualitative analysis is to read and reread the transcripts; for example, in the present work, after audio interviews were conducted and turned into writing, they were reviewed and reread to gain familiarity with the data. Familiarity with the data is obtained by studying and writing the phrases obtained from interviews.

At this stage, a systematic and meaningful method began to organize the data. Coding reduces large amounts of data into small chunks of meaning. There are different ways to codify. Producing primary codes means extracting the initial concepts of written semantic expressions.

A theme is a template that carries a semantic burden on data, the theme's search stage, the query to find

sub-themes that encompass one or a set of extracted or more sub-themes. concepts. Then find the main themes that include one

**Table 1: Initial Code Generation (Extraction of Concepts)**

Semantic phrases	Primary code (concept)
The flexibility in Parachin is very high.	Being flexible
Parachin must prove to Polkadot verifiers that each of its blocks follows the agreed protocol.	Follow protocol
Each parachin can have its own design, token and governance process.	Special Governance Process
Parachins can be used as public or private networks as companies or associations as platforms for others to create applications or as common goods for the benefit of the entire Polkadot ecosystem among a wide range of other models.	the use of other paraphernalia and
Surely, the Gospel is a place for others to make plans.	Ease of use for users
Parachinans inherently acquire the cross-combining ability of pulcadate.	Partnership and Mutual Cooperation
Parachin can provide full governance over blockchain communities, allowing them to engage with other parachains and external networks.	Governance of blockchain and partnership with foreign networks
Polkadot is famous for its ability to host parachins, on-chain chains that allow for more transactions than usual.	Possibility of more transactions
Using the interoperability of Polkadot and Kusama, Parachins can examine not only tokens but also types of data, including transaction validation, off-chain information of overlords, and the relevance of smart contracts.	Investigating the Types of Data and Smart Contracts Based on Poolkadot Mutual Collaboration Feature
The Parachins in Polkadot are free to choose the model of governance they consider appropriate.	Governance and freedom of action in choosing the model of governance
A Parachin network in Polkadot network can implement its own economic model and has a lot of freedom in this regard.	Freedom to implement the desired model
The choice of the economic model of a parachin was the choice of the network.	Freedom to choose the economic model
Any project in Parachin can implement its own management model.	Freedom of Action in Parachin
Many businesses are looking to use this technology with the introduction of blockchain technology. But creating an independent blockchain network required a lot of time, expertise, and time, and parachin deployment is one of the alternatives.	Utilize Paraguayn because of the economic costs
The costs of setting up Parachin are much lower compared to blockchain.	Cheaper than the use of blockchain
Each Parachin slot is required as a subscription. The lease term is agreed before it starts, which allows projects to connect to the Polkadot platform network chain for as long as they need to, without necessarily being permanently dependent on it.	Rental of Parachins slots as a subscription
Winning the Parachin slot brings a wide range of benefits, especially for projects that have just started.	Benefits of using the Parchin slot
Projects run on parachins can be faster and avoid network congestion because they devote their consensus and security to the network's platform.	Accelerate the process of projects because of greater security.
The parachin is a special structure for data management.	Specific and appropriate management structure
It manages the information.	Proper information management
Parachins have the ability to move any type of data or assets.	Ability to move data
The use of parachin technology in networks such as Polkadot provides the necessary scalability for the network in the right and efficient ways.	Scalability in the right and efficient way
The scale of scalability is provided in Parachins.	The size and size of the scalability are clear.
The Parachin model allows its blockchain to improve its scalability at layer one.	Improve scalability in layer A

Source: Writer 1402

**Table 2: Search for Themes**

Primary code (concept)	Sub-fields
Flexibility	Flexibility
Follow protocol	
Special Governance Process	
Other Uses of Parachin	
Ease of use for users	
Cooperation and study of mutual communication and cooperation	Mutual Partnership and Cooperation
Governance of blockchain and partnership with foreign networks	
Possibility of more transactions	
Investigating the Types of Data and Smart Contracts Based on Mutual Cooperation Feature of Polkadot	Governance and Governance
Governance and freedom of action in choosing the model of governance	
Freedom to implement the desired model	
Freedom to choose the economic model	
Freedom of Action in Parachin	Lower cost
- Utilization of Paraguayn due to the cost of the economy	
Cheaper than the use of blockchain	Rental Slots
-Rental of Parachins Slots Shared	
Benefits of using the Parchin slot	Speed of action
Accelerate the process of projects because of greater security.	
- Specific and appropriate management structure	Data and Information Management
Proper information management	
Ability to move data	
Scalability in the right and efficient way.	Scalability
The size and size of the scalability are clear.	

Source: Writer 1402

**Table 3: Check them out.**

Sub-fields	Main themes
Flexibility	Flexibility
Mutual Partnership and Cooperation	Mutual Interoperability
Governance and Governance	Governance
Lower cost	Low cost capability
Rental Slots	Slot Rental Capability
Speed of action	Ability to operate quickly
Data and Information Management	Data Management Capability
Scalability	Scalability

Author Source: 1402

At this stage, the initial themes identified in the previous stage are reviewed, modified, and developed.

**- Define Themes**

- This is the final revision of the themes and the goal is to "identify" the nature of what each theme is about.

**Flexibility:** The Polkadot parachin model is designed with the belief that in the future internet we will have different types of blockchains that will work together. As the current version of the Internet meets different needs, blockchains must be able to provide a

variety of services: one chain may be designed for play, another for identity management, another for finance, etc. At the same time, these networks must be able to interact. So Parachin has a lot of flexibility. That's why Polkadot does not specify any criteria regarding the design of Parachin, other than that they must be able to prove to Polkadot validators that each block of Parachin follows the agreed protocol. This flexibility means that each Parachin can have its own design, token and governance process. Its own use is designed. Parachins can, as companies or associations,

be used as platforms for others to create applications or as common goods for the benefit of the entire Polkadot ecosystem, among a wide range of other models. When it comes to modelling of parachains, Polkadot has provided optimal flexibility. The only criteria set by the dot network is that the Parachain must prove to Polkadot validators that each of its blocks follows the agreed protocol. This means that the parachain must follow the relay chain consensus. For this reason, the flexibility of a parachain can be designed as a chain with It can be run as public or private networks and has its own native token and carries out the governance process. It can also be created as a platform for others to make plans on it.

**Scalability:** Interoperability and the ability to interact with other blockchains is one of the key factors that characterize the scalability of any blockchain. However, if such a situation does not exist, blockchains must rely on layer 2 solutions to work together. This allows a parachain to create this capability in its layer 1. They are more efficient at achieving the scalability and power of blockchains, as their transactions can be extended and processed in parallel within the blockchain ecosystem of each layer 1 project.

**Mutual Interoperability:** One of the biggest advantages of Parachains is that it inherently acquires the reciprocal combining of Polkadot. Therefore, as a Layer 1 chain, it can provide complete control and governance over blockchain communities and also allow them to engage with other Parachains and external networks. Inter-chain interoperability enables not only the exchange of cryptocurrencies, but also the exchange of any type of data including calls for smart contracts, validations, and off-chain information, through oracles. This nature opens up new opportunities for applications to collaborate and create new services. Taking advantage of the interoperability of Polkadot and Kusama the Parachains can examine not only tokens but also data types, including transaction validation, off-chain information from Oracles, and smart datapackets.

**Governance:** Parachains are free to use any optimized model. They can also access complex parachaining mechanisms for governance, reducing the likelihood of a hard fork on the chain. The Parachains in Polkadot are free to choose the governance model they see fit and can integrate several pre-built modules to implement various chain systems. The ability to access

complex governance mechanisms within the chain allows teams to significantly reduce the likelihood that forks will occur in their own chain that can divide their community in two. Each project can implement its own management model and determine the network management model based on the industry, scope, and target community.

**Speed Action:** Projects run on parachains can be faster and avoid network congestion because they devote their consensus and security to the network platform.

**Data and information management capabilities:** Parachains are a type of blockchain network that is a special structure for data and information management, which runs parallel to the Polkadot ecosystem.

**Low cost capability:** Many businesses are looking to use this technology with the introduction of blockchain technology, but creating an independent blockchain network requires a lot of time, expertise and cost. Parachain setup is one of the alternatives.

**Slot rentals: To set up a parachain in the Polkadot network,** you must rent slots for a while. The price of the parachain slot is set in the market and is completely dependent on supply and demand in the market. Teams can rent slots in Polkadot for a minimum of six months to a maximum of two years. Parachains attached to the Polkadot can access the processing power required, without additional fees. Pooling the Parachain slots they need through investors, they may decide to reward their investors in any way they see fit, and this additional cost will come with them. Other minor costs include the cost of running consolidating nodes on Parachain. For applications with large numbers of users and high traffic, it is expected that implementing Polkadot as a Parachain is more affordable than running a buck. Individual China or its construction is available on the smart contract platform.

## **Writing and final analysis**

The Parachain can be considered as a type of blockchain that is a special structure for data and information management that runs parallel to the Polkadot ecosystem. However, by connecting to the central network, it does not need to define distinct nodes. Parachain is connected to the central chain of the Polkadot network and enjoys the security, scalability, interoperability and governance of the Polkadot



network. Interoperability benefits from the Polkadot network chain Inter-chain interoperability of the Polkadot network allows for the transmission of any type of data or assets between Parachains, enabling new applications and applications. Parachains can also be connected to external networks such as Bitcoin and Ethereum through inter-chain technology. Polkadot is designed as a layer 0 multi-chain network, meaning that the central relay of security and interoperability layer 0 In other words, a multi-chain network is designed to enable the launch of approximately 100 blockchain networks called Parachains. All of these networks are connected to the main Polkadot network and the nodes of this network. Each transaction in the Polkadot network is executed in parallel in Parachain

and on the time that this transaction is recorded on the It is said that in order for a parachain to be added to the Polkadot it must be placed in one of the existing slots. Many businesses are looking to use this technology with the introduction of blockchain technology, but creating an independent blockchain network requires time, expertise and high cost. Parachain setup is one of the alternative solutions. While the cost of setting up a Polkadot network is comparable The use of parachain in smart contracts is provided by projects that enable Ethereum developers to transfer their contracts to Polkadot, so the Polkadot ecosystem system is open to a variety of popular applications and a large number of developers.

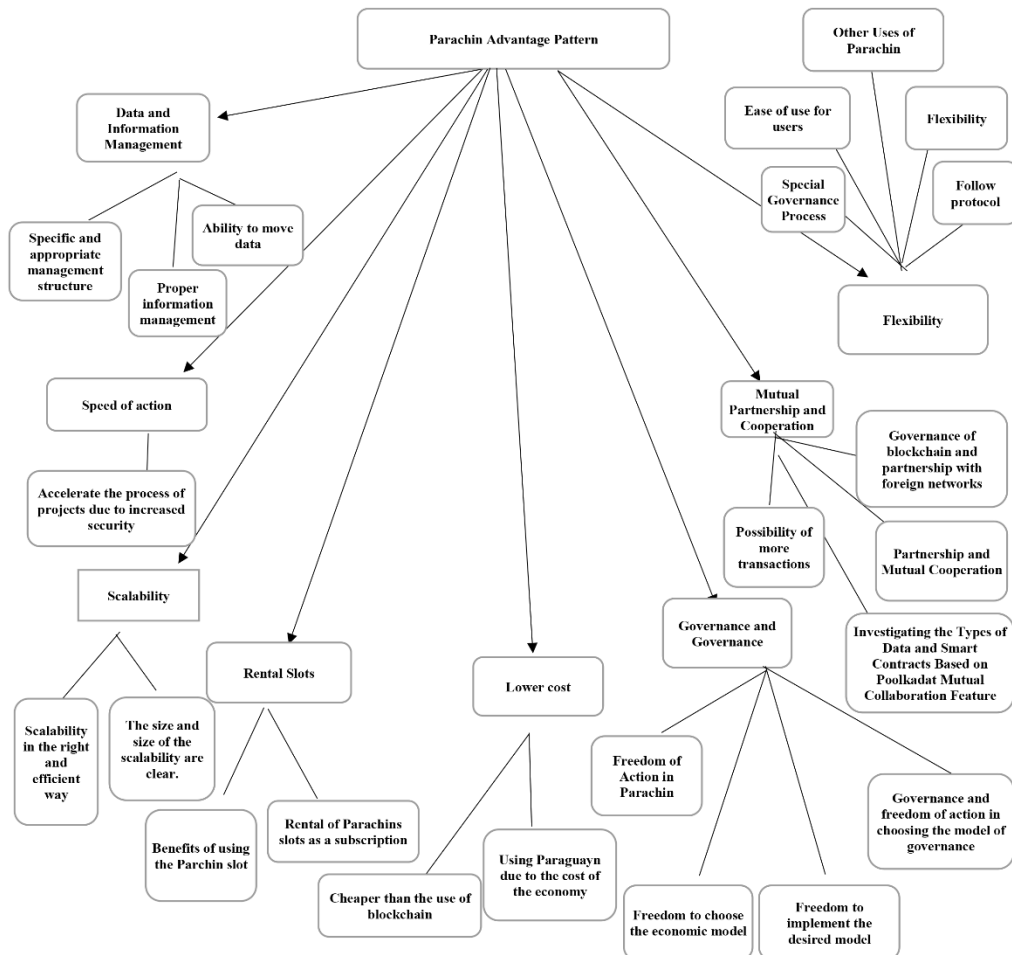


Figure 1: Advantages of Parachain Pattern  
Source: Findings of 1402

In this study, for nonparametric analysis, Friedman test was used in SPSS. A questionnaire consisting of 8 questions was used. These questions were measured in a five-choice Likert spectrum. The number of respondents is 50 people. The purpose of this analysis is to determine whether there is a significant difference between 8 questions in terms of importance. Accordingly, dependent variable, answers of the respondents, and independent variable are the questions of the questionnaire, which includes the same 8 questions. Be.

### Output of the Friedman Rating Test

**Table 4: Quartiles**

Descriptive Statistics				
	N	Percentiles		
		25 <sup>th</sup>	50 <sup>th</sup> (Median)	75 <sup>th</sup>
Data and Information Management	50	2.00	4.00	5.00
Rental Slots	50	1.00	2.00	2.25
Mutual Partnership and Cooperation	50	1.00	2.00	3.00
GayGirlfriend	50	4.00	4.00	5.00
Speed of action	50	1.00	2.00	4.00
Quantity and Governance	50	1.00	2.00	2.00
Flexibility	50	4.00	4.00	5.00
Low cost	50	3.00	4.00	5.00

Source: Findings of the study 1402

In this table, the 25th quartile, the 50th quartile, or the middle quartile, and the 75th quartile are presented.

**Table 5: The Table.**

Ranks	
	Mean Rank
Lower cost	5.13
Speed of action	2.97
Governance and Governance	3.41
GayGirlfriend	6.40
Carpet and Mutual Cooperation	3.84
Slot Rental	2.64
Flexibility	6.05
Data and Information Management	5.56

Source: Findings of 1402

In this table, the mean rank of each of the groups dependent on the independent variable is displayed.

**Table 6: Final Test Results**

Test Statistics <sup>a</sup>	
N	50
Chi-Square	136.151
df	7
Asymp. GIS.	.000

Source: Findings of 1402

This table shows the final results of Friedman's test. The above table shows the statistical value of the test of Q2 ( $\chi^2$ ), in freedom (df) and statistical significance (Asymp). Sig (or p-value) is equal to /000 and less than the significance level of /05. Conclusion that there is a significant difference between the questions in terms of importance and from the perspective of respondents the questions are not of the same value and importance. According to the quartile table, the indices (scalability, 6.40) and (rent slot 2.64) respectively have the highest and lowest rank and indices, respectively). Flexibility (6.05), (data and information management 5.56), (low cost 5.13), (3.84), (governance and governance 3.41), (speed of action 2.97) are the middle ranks. In this way, the importance of each of the indices (parachin characteristics) was determined.

Based on the findings of the research, the scalability index has the highest rank with 6.40 Interoperability and the ability to interact with other blockchains is one of the key factors that determine the scalability of any blockchain. Meanwhile, if such conditions do not exist, blockchains must rely on layer 2 solutions to cooperate with each other. In this way, a parachain can create this capability in its layer 1. Parachains have a decentralized and more efficient means to achieve blockchain scalability and power, because their transactions can be parallelized in the blockchain ecosystem of each project. Layer 1 is expanded and processed. As one of the new technologies of the digital world, block chains and blockchain continue to operate and progress with a specific purpose. Goals such as user security, scalability, and decentralization are among the main goals of this technology, and the development teams have faced many challenges in many cases to achieve these goals. In addition, communication between different blockchains is also It is one of those topics that is still in an aura of uncertainty. Parachain, as an independent blockchain and a new technology, aims to

make this communication easier. In other words, it can be said that Parachains are one of the communication ways. are new that various blockchain-based projects use to communicate with each other. Blockchain technology is one of those things that has a lot of complexity and attractiveness and has been able to attract the attention of many people in recent years. to attract people from different fields of work. Parachain technology is one of these attractions, which entered the field in line with blockchain. Parachain has a structure that allows its users to perform faster transactions with a lower cost.

## Conclusion

The ability to launch parachins is a very new concept. The use of Parachins is smart contracts provided by projects that enable Ethereum developers to transfer their contracts to Poolkadat. Therefore, we have developed the Poolkadat ecosystem for all kinds of <sup>23</sup>DeFi decentralized applications. Popular and lots of developers open the d. The Polkadot ecosystem currently includes a smart contract platform and a community-led platform that reflects Ethereum's accounts, keys, subscriptions and reports. The goal of Polcadat design as the main host platform is to create a range of different features and capabilities for designing partner blockchains, which means the number of potential uses of this technology. The most important purpose of this research is to provide a model for the use of Parachin technology in banking and ranking the reasons for using this technology. According to the results of the research, scalability, flexibility, interoperability and participation, lower cost of Parachin technology than blockchain, data and information management, speed of action of Parachin technology in banking transactions, governance and governance of this technology Slot rentals are the most important features of Parachin technology that ensure the use of this technology in the banking industry. Parachins are customized and special blockchains for various projects that are integrated into Polkadot and Kusama networks. Parachins can be customized for any number of applications and imported into the main blockchain. This original blockchain is known as the Railroad and Relay Chain. This design structure allows Parachin users to process transactions faster and at a lower cost, and Parachin developers can create

blockchains that do not disclose users' data over the public network or do not need to process large numbers of transactions. The reasons for using Parachin technology are ranked as follows: (scalability, 6.40), (flexibility 6.05), (data and information management 5.56), (low cost 5.13), (participation and cooperation of Abel 3.84), (governance and governance 3.41), (speed of operation 97.2) and (rent slot 2.64). Interoperability and ability to interact with other blockchains are key factors that determine the scalability of each blockchain. However, if such a situation does not exist, blockchains will have to rely on Layer 2 solutions to work together. One of the biggest advantages of parachins is that it inherently acquires the cross-linking pooladeat. Thus, as a Layer 1 chain, it can provide complete control and governance over blockchain communities, allowing them to engage with other parachains and external networks. Innovation enables the transmission of data and various assets of Robin Parachins and develops new applications and applications that may not even be discussed yet. In general, due to the innovation and progress made in Polkadat networks, it can be predicted that a good future awaits society.

## Resources

- The First International Conference on Leap in Management, (1401). , Economics and Accounting, Sari. Teaching and Analysis of Financial Markets
- Oryi Gholami, M. and Araghizadeh, M. Amin (1400), Providing a Solution for Securing Internet of Things Communication Protocols by Smart Contracts, 7th National Conference and the First International Conference on Distributed Computing and Big Data Processing, Tabriz.
- Jani, Forroush and Azadbakht, Amin (1400), Transformation of the service sector (especially finance) of an economy in the context of blockchain technology smart contracts.
- Fayazbakhsh, Akram (1400), Achievement called Blockchain, Journal of New Research Approaches in Management and Accounting, Vol. 5, No.60.
- Venkatesh, V.G., Kang, K., Wang, B., Zhong, Y.R., and Zhang, A. (2020). "System Architecture for Blockchain Based Transparency of Supply Chain Social Sustainability". Robotics and

<sup>23</sup> Dapp

- Comouter-Integrated Manufacturing. 63, 101896.
- Rashvand Boukani, M., Naser, M. (2019), Intention of Actors in Smart Contracts: Validity Conditions and Methods of Authentication, *Islamic Law Research*, Vol. 20, No. 1, pp. 271-275-300
- Kamble, S., Gunasekaran, A., and Arha, H. (2019). "Understanding the Blockchain Technology Adoption in Supply Chains-Indian Context".
- Mozafari, Mostafa, Naser, Mahdi (2018), The role of smart contracts in fixing the property rights of individuals, *Legal Research Quarterly*, No. 95
- International Journal of Production Research* , 57(7): 2009-2033. Sadouskaya, K. (2017). Adoption of Blockchain Technology in Supply Chain and Logistics. Bachelor's Thesis, South-Eastern Finland University of Applied Sciences, 57(7): 2009-2033.
- González, A., Ramos, J., De Paz, J. F., & Corchado, J. M. (2014). Obtaining relevant genes by analysis of expression arrays with a multi-agent system. *ADCAIJ: Advances in Distributed Computing and Artificial Intelligence Journal*, 3(3), 35-42
- Sarathi, Partha; Saha, Anish Kumar; Ara Begum, Shahin (2012), The application of E-commerce in Business Application