



Article Type: Research Article

Available online: [www.tmp.twistingmemoirs.com](http://www.tmp.twistingmemoirs.com)

ISSN 2583-7214

## IMPROVING USERS' SECURITY SATISFACTION IN E-COMMERCE BY PROVIDING NEW COMPONENTS

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### ABSTRACT

Today, electronic commerce is considered a tool that plays an important role in expanding tourism and hotel activities. So that this industry uses this tool the most. In this regard, using the advantages and appropriate features of e-commerce and its correct definition in the hotel industry can play a key role in attracting tourists; Therefore, in this research, we want to improve the hotel industry with the aim of increasing the security satisfaction of customers, and to achieve this, blockchain technology will be used. The results showed that the use of blockchain has increased the satisfaction of hotel customers and improved their loyalty.

**Keywords:** e-commerce, customer, hotel industry, blockchain technology, security satisfaction

### INTRODUCTION

The purpose of this research is to use blockchain technology to improve the hotel industry and increase security satisfaction, because blockchain has the ability to increase transparency, security and efficiency, which will not only help the growth of online hotels, but also increase Users are satisfied in every way.

Electronic government and its implementation in the best way is always one of the concerns of governments. One of the most important challenges that governments always face is responding to the changing demands and expectations of customers (citizens) from whom they gain their legitimacy. In line with answering these demands, the government should search for the best practices to bring continuous and useful innovation in providing services to its customers. The use of information and communication technology to provide government services to society, which is called e-government, is a new initiative that aims to provide customers with access to services through electronic media and the relationship between them. to establish in a new way. By looking at the advanced countries of the world, we find out how

far the electronic government and then electronic commerce have been able to reduce public expenses and the efficiency and effectiveness of the control and management of social, tax, health, public treatment and social security systems. to maximize [1,2].

E-commerce as a place of connection between information technology and the business market has made it possible to provide a permanent market for the activities of many people in this field, especially in the hotel industry, because nowadays more people spend their time traveling and having fun in the parts of the country. Therefore, services should be provided in the best way, meaning the most satisfaction and trust to them, according to these explanations, in this research, we want to provide a solution to achieve this goal [3-5].

Today, blockchain is considered as an information transformation technology that is expected to lead to a revolution like the Internet. In fact, this emerging technology is a response to security challenges because its purpose is to create a secure and protected platform for sharing user data against interference. Blockchain was initially used as a method to record and store cryptocurrencies, but in recent years it has attracted many opinions and is used in many industries such as banking, financial markets, insurance, voting, rental contracts. and government services to be used [6,7].

Because using blockchain in the hotel industry brings the following advantages [8-10]:

**1 .Using smart contracts with the help of blockchain:** they give businesses a competitive advantage. Because it improves automation and speed in the supply chain. It also reduces user errors because it eliminates manual records, so it creates trust between the parties.

**2 .Increasing data security:** managing a hotel means storing and processing a large amount of data. For example, it includes hotel information, employees, customers, hotel services, and most importantly, customer credit card details. By using blockchain, it is possible to guarantee the storage and security of a huge set of data. Because customers cannot trust each other in the field of their personal information, it is necessary to share their information in a secure platform against any external access, which blockchain helps to create such a platform.

**3 .Payment security:** Blockchain has the ability to record any financial transactions, these data are blocked by impenetrable codes. Blockchain can create a complete record of financial transactions; It means that it has the ability to follow the movement of money and it ends only when it turns into physical cash; Because bills and coins remain completely anonymous. Therefore, when hotel transactions are based on blockchain, it is easy to detect fraudulent transactions.

**4 .Customer comments filter:** Finally, blockchain can be used to filter online comments; Because in many businesses, users read the opinions of previous customers before buying. It means that online reviews are correct, fair and reliable, it becomes more important.

The purpose of this article is to use blockchain technology to satisfy customers and increase their trust in the hotel industry, because blockchain technology is impossible due to its distributed database features, person-to-person communication. The changeability of recorded transactions, transparency and calculation logic, greatly reduces the need to establish trust and recognition between the parties; Therefore, with its help, it is possible to guarantee the creation of a reliable framework in increasing the security satisfaction of customers.

## **RESEARCH BACKGROUND**

Hussein et al. (2023) reviewed the latest milestones of blockchain consensus algorithms. Blockchain technology has gained widespread adoption in recent years due to its ability to enable secure and transparent record-keeping and data transfer. In this review paper, they examine various consensus algorithms that are used in blockchain systems, including proof-of-

work, proof-of-stake, and hybrid approaches. they go over the trade-offs and factors to think about when choosing a consensus algorithm, such as energy efficiency, decentralization, and security. also look at the strengths and weaknesses of each algorithm as well as their potential impact on the scalability and adoption of blockchain technology [1].

Rjoub et al. (2023) using adaptive neuro-fuzzy-based K-nearest neighbors algorithm introduced a blockchain technology-based FinTech banking sector involvement. This paper implements blockchain-based financial technology for the banking sector to overcome these transition issues. In this study, they have proposed an adaptive neuro-fuzzy-based K-nearest neighbors' algorithm. The chaotic improved foraging optimization algorithm is used to optimize the proposed method. The rolling window autoregressive lag modeling approach analyzes FinTech growth. The proposed algorithm is compared with existing approaches to demonstrate its efficiency. The findings showed that it achieved 91% accuracy, 90% privacy, 96% robustness, and 25% cyber-risk performance. Compared with traditional approaches, the recommended strategy will be more convenient, safe, and effective in the transition period [2].

Sun et al. (2022) introduced a blockchain-based secure storage scheme for medical information. This paper proposes a healthcare information security storage solution based on hyperledger fabric and the attribute-based access control framework. The scheme first utilizes attribute-based access control, which allows dynamic and fine-grained access to medical information, and then stores the medical information in the blockchain, which can be secured and tamper-proof by formulating corresponding smart contracts. In addition, this solution also incorporates IPFS technology to relieve the storage pressure of the blockchain. Experiments show that the proposed scheme combining access control of attributes and blockchain technology in this paper can not only ensure the secure storage and integrity of medical information but also has a high throughput when accessing medical information [3].

Trček (2022) protected cultural heritage preservation by using blockchain technologies. This multidisciplinary framework paper analyses existing disruptive information technologies deployments. In line with the findings it presents a novel technological architecture tailored to the needs of cultural heritage preservation that deploys an open blockchain architecture. The architecture preserves the advantages of traditional blockchains, which made this technology so important, while enabling energy efficient implementations that can be deployed in mobile applications. By additionally using the contribution-ware principle it links it to tourism, where the identification of users focused incentives and business models play a central role. It is obvious that tourism is a good candidate in such preservation efforts due to the organic links between it and cultural heritage and can support further developments in the heritage preservation domain [4].

Dong et al. (2022) with the help of IoT tracking and machine learning, they managed the blockchain supply chain. They propose to utilize blockchain in modern supply chains to ensure efficient collaboration between all parties. Also adopt multi-head attention (MHA)-based gated recurrent unit (GRU) to do inbound logistics task prediction. Finally, numerical results justify that multi-head attention-based GRU model has better fitting efficiency and prediction accuracy than its counterparts [5].

Singh et al. (2021) Explore blockchain security attacks, challenges, and solutions for the future distributed IoT network. This paper discusses the blockchain concept and relevant factors that provide a detailed analysis of potential security attacks and presents existing solutions that can be deployed as countermeasures to such attacks. This paper also includes blockchain security enhancement solutions by summarizing key points that can be exploited to develop various blockchain systems and security tools that counter security vulnerabilities. Finally, the paper discusses open issues relating to and future research directions of blockchain-IoT systems [6].

Yang et al. (2019) proposed a blockchain-based PGS (BPGS)<sup>1</sup> to deal with big data for this business model. Blockchain is a decentralized technology, so it can be used to speed up product grading verification. They managed 51% of the attacks by providing the proposed BPGS. This indicates that the proposed e-commerce environment based on BPGS is not only reliable but also secure. Since consumers and merchants may have different perceptions of product quality, this may lead to commercial disputes. For example, the difference in buying low-end products that may be caused by simple photos of the product or that the sellers made the most claims about their products. These problems are not completely solved, even if customers choose reputable e-commerce companies, such as Amazon.com and Alibaba.com. In the final analysis, they found that e-commerce companies do not consider quality ratings to evaluate their products. If there is a union between e-commerce companies and reputable organizations that create a reliable product grading system (PGS), online shoppers can get the original product at a more reasonable price and feel comfortable to buy [7].

Morkunas et al. (2019) examine how blockchain technologies affect the business model. This article offers a primer on blockchain technology aimed at general managers and executives. The key contributions of this article lie in providing an explanation of blockchain, including how a blockchain transaction works and a clarification of terms, and outlining different types of blockchain technologies. Also discuss how different types of blockchain impact business models. Building on the well-established business model framework by Osterwalder and Pigneur, they outline the effect that blockchain technologies can have on each element of the business model, along with illustrations from firms developing blockchain technology [8].

Lee (2019) describes how blockchain technology and currency cryptography evolve and connect. Blockchain is expected to be a key technology that enables new protocols to create a token economy in the future, leading to a new economic paradigm [9].

Azzia et al. (2019) presented the power of blockchain-based supply chain. A supply chain is a system of organizations, people, activities, information and resources involved in the transfer of a product or service from a supplier to a customer. It is designed to maintain the quality of sensitive goods during transport. Centralized systems expose the supply chain to corruption, fraud and manipulation, so blockchain has emerged as a new distributed information technology and reduces these factors. This is a new approach in the field of supply chain. shows, where the visibility and transparency of the product flow are the main challenges. In this article, how to integrate blockchain in the supply chain architecture to create a reliable, transparent, valid and secure system was described. To achieve this goal, they examined the benefits of introducing blockchain to the supply chain and the challenges in the blockchain-based supply chain management ecosystem. They also combined theoretical and real-world applied studies to build their theory on the requirements of an efficient blockchain-based supply chain [10].

Xie et al. (2018) presented a trusted transaction framework using blockchain in electronic commerce (ETTF)<sup>2</sup>. Improving efficiency and performance is an important issue in today's world. In e-commerce, security technology has become an important issue that limits the rapid development and popularity of e-commerce. Existing solutions leverage blockchain protocols to improve the validity of transactions, but most of them have limitations such as lower power and higher consensus latency, and these problems make blockchain technology China is not widely used. In this article, a reliable framework using the blockchain protocol in e-commerce to achieve a reliable business is presented. ETTF includes a blockchain collaboration protocol based on a blockchain collaboration architecture to support mass storage of transactions. In PBP<sup>3</sup>, power scales linearly with computation: the more computing power available, the more blocks are selected per unit time. In addition, to ensure more security of transactions, they have

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<sup>1</sup> Block-chain Product Grading System (BPGS)

<sup>2</sup> Trusted Trading Framework Using Block-chain in E-commerce (ETTF)

<sup>3</sup> Peer Block-chain Protocol (PBP)

introduced Strong Consensus Algorithm (ECA) in e-commerce. ETTF is also efficient because the number of messages it requires is linear in the size of the network. Compared to the blockchain derived from Bitcoin, ETTF shows better performance in e-commerce throughput, latency and capacity [11].

Xu et al. (2017) presented a mechanism for blockchain-based e-commerce with the aim of supporting high throughput, high reliability in data and real-time transactions. Transactions may change, which leads to low transaction validity and limits the rapid development and popularity of e-commerce. Although blockchain can ensure high stability and reliability in data, existing solutions still have significant scalability barriers such as low power and high latency. To improve credibility, this paper presents an e-commerce blockchain consensus mechanism (EBCM)<sup>4</sup>. EBCM does not rely on the power of calculations and tokens, but with the same level of security and validity as consensus. Meanwhile, EBCM achieves real-time trading and routing. By introducing validation blockchain, it can be ensured that transactions cannot be changed. In order to realize high throughput and real-time transaction, this paper creates a two-layer blockchain. By comparing the performance of EBCM with Bitcoin, it shows its better performance [12].

## **HOTEL MANAGEMENT**

### **The effect of satisfaction and loyalty**

Customer loyalty is the key to business success, and the concept of a loyal customer is to increase profitability at low costs. In today's fast-paced world, building and maintaining customer loyalty requires hard work. E-commerce has reduced many entry barriers for competitors and has provided the customer with an unprecedented choice of suppliers. Most of the old business organizations did not consider the new methods of customer relations and lost most of their customers. A loyal customer is a great marketer and a valuable source of sales.

### **Customer maintenance**

Certainly, acquiring a new customer is much more expensive than retaining an existing one. The best customer retention program is achieved. Satisfying the most important things for customers is customer satisfaction in the best possible way. The basic justification for measuring customer satisfaction is to provide information that enables managers to make the right decisions to maximize customer satisfaction and thereby improve customer retention, which shows the relationship between loyalty and profitability.

### **Loyalty in the hotel industry**

Loyalty is very important in the hotel industry, because most sectors in this industry are saturated and facing intense competition. Directing customer loyalty through a customer relationship approach has become the marketing strategy of most of the services provided by the hotel. It is difficult for hotels to differentiate themselves from their competitors. For this reason, hotels are looking for success through improving services and services themselves, in order to increase customer satisfaction and make sure that guests will be loyal to the hotel. It is important to know the difference between customer satisfaction and loyalty. Customer satisfaction evaluates the extent to which the customer's expectations from the transaction have been met. While customer loyalty evaluates how customers may return to the hotel.

## **BLOCKCHAIN**

Blockchain is a chain of blocks that contain information. This technology was first described in 1991 by a group of researchers. Originally, it was created in order to schedule digital

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<sup>4</sup> E-commerce Block-chain Consensus Mechanism (EBCM)

documents so that it is no longer possible to change the date or tamper with them. Like a notary, of course, it was not used much until 2009, before the creation of Bitcoin. Blockchain in itself is not a fundamental technology. Rather, it is a set of hashing and encryption processes, collective distribution, etc.; And it was used in banking since 2014 [1,2].

Blockchain technology is a decentralized database based on a global distributed ledger on the internet, where the history of all transactions and people's asset records can be stored in this ledger. Blockchain is a chain of blocks. In fact, it is a ledger/a system of recording information and reporting/or a distributed database; And the information stored on this type of system is shared among all network members. Every ten minutes, the set of transactions made in the network is created and published in the form of a block of information. It is almost impossible to delete and manipulate the registered information. Any change in the blockchain depends on the change of more than 50% of the data of the computers connected to the network. Maybe quantum computers will be able to do it by 2027 [3,5].

Blockchain is used in many fields, including digital currency and securities, smart contracts, record keeping, Internet of Things, supply chain management, wherever the integrity and quality of information is important to us and...

## **PROPOSED METHOD**

The main goal of this research is to increase the security satisfaction of hotel customers and gain their trust with the help of blockchain technology. Blockchain creates a great opportunity for the hotel industry to remove middlemen from the booking process, for example. The implementation of a blockchain-based reservation system allows the complete or partial removal of system operators and the creation of a trusted environment. A blockchain-based reservation platform can help hotels in the long run to provide their own reservation network. If blockchain is implemented in hotels, customers can book rooms at cheaper rates because the peer-to-peer network eliminates middlemen and commissions, and on the other hand, blockchain features It preserves the privacy of travelers and increases their trust in the chosen hotel. There are various benefits for both parties when using a blockchain-based booking system. For example, it includes identity verification. This means that when making a reservation through the blockchain, the identity of the person who made the reservation can be verified. In addition, secure payment and risk reduction are part of the blockchain-based hotel reservation system based on the use of wallets. The implementation of a blockchain-based reservation system will completely or partially eliminate platform operators. Creating a wallet or account for a hotel is very simple, all it takes is a desktop computer or even a mobile phone, and building a blockchain is accessible to even the smallest properties.

In the hotel industry, users can be classified into the following sections:

1. New customers (tourists who make their decision based on online reviews),
2. Transfer of partners without previous business relations
3. Small tour operators versus online travel agencies

From the hotel customer's point of view, trust in providers is usually captured by a complex scale of trust (for example, how a host can demonstrate trust by combining the feeling created by the profile image and the feedback obtained from customers. From the point of view of the provider, it can be covered as a reflective structure that makes trust towards the host meaningful and meaningful. Therefore, we considered trust as a belief in an honest, reliable and worthy platform in the hotel industry. From the point of view of customers, the conceptualization of trust in two separate structures is important: guests' trust in the host and in the reliable hotel system; For example, the distinction between trusting system providers and trusting providers (hosts). It should also be noted that trust is able to transfer from the system to peers; For

example, trust in the platform and features of the host has a positive effect on trust in the host. Due to the problems and lack of trust in the hotel industry, the goal is to increase their trust by creating wallets for hotel customers to pay for hotel services with ease.

### Wallet details using blockchain

Each traveler in the hotel system has a wallet address and an encryption key associated with the wallet in the blockchain application. The wallet is connected to the traveler through a crypto exchange server as shown in Figure 1. Smart contracts are implemented through the smart contract layer to ensure the optimal level of interoperability among users and service providers associated with the same chain.

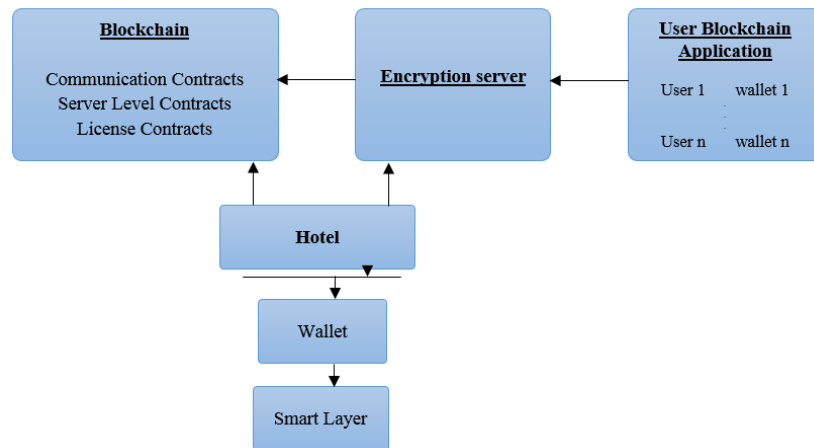


Figure 1: Blockchain details

- Relationship Agreements: These relationships are defined between travelers and service providers at the respective hotel, which are maintained through the wallet address for the respective user.
- Service Level Agreements: This status stores the relationship between the traveler and the related service provider in the hotel. This status can be active or inactive. Multiple communications may be enabled and differentiated based on the smart contract and execution of smart contracts. Therefore, a traveler is assured of access to data, and the level of access, and can also view all related to old transactions.
- License Agreements: This stores records on the chain of objects that are accessed using license agreements. Whenever a record is created, a permission is attached to it.

The different levels of access that license agreements guarantee are as follows.

1. Read: For specific details, search a specific node.
2. Write: query a node and change the contents.
3. Transfer: It transfers the data contents of one node to another node for exchange servers.
4. Administrator: This is the representative of the owner who has full rights and can make any appropriate changes to the node.

How blockchain technology works in the payment system includes transaction definition, transaction authentication, block creation, block confirmation, and block chaining:

Most people use an intermediary such as a bank to make a financial transaction, but blockchain allows buyers and sellers, senders and receivers of virtual money to communicate directly with

each other without the need for a person. The third is eliminated as an intermediary. This form of transaction is called "peer-to-peer", blockchain uses cryptography to create security in exchanges. Unlike banking systems that are located in a specific location and operate in a centralized manner, the data center in which blockchains are located is completely decentralized and distributed throughout the world. The location of blockchains is called "distributed ledger". This ledger is such that anyone on the network can see its details. This network is actually a chain of computers that confirm the correctness of the transactions between you and your counterparty, and after confirmation, add it to the blockchain. Each transaction generates an eight-character code that is combined with the previous eight-character code to create a new block. Using new blocks, each block produces a linear sequence, time, and a string of disposable characters, so it is almost impossible to manipulate and create false and untraceable information [15].

As shown in Figure 2, a traveler's hotel check-in program is used to generate rating scores and then transfer them as input to the proposed framework.

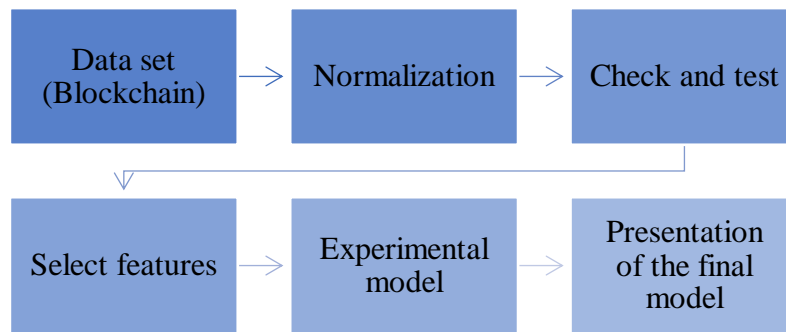


Figure 2: Convergence of machine learning and blockchain in smart tourism and reliable hotel management

Each traveler is registered in the blockchain system, which has its own data repository with fields such as destination options, including travel method, travel season, food selection, payment method, preferred hotels. The user repository is given as input to the learning model for each user. The data is trained with the help of learning and matched to produce ranking scores. To make predictions using learning, we access the previous historical records of a particular passenger in the blockchain. Then I access the current wallet address and his signature. 80% is selected for educational purposes and 20% for testing.

**Wallet address details**

User wallet contains personal information of travelers such as user profile (user name, photo, address, and user ID), as shown in Figure 3.

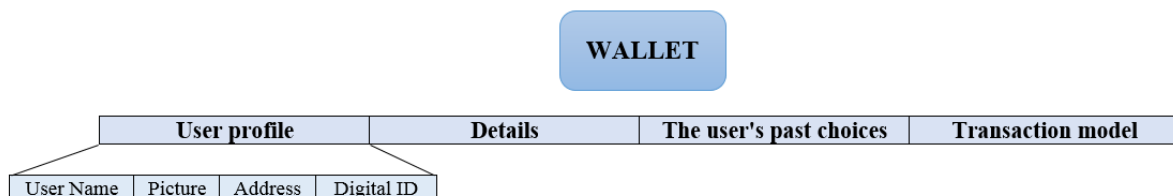


Figure 3: Wallet wallet in the proposed framework

When a user accesses the blockchain application, the wallet details are assigned to a wallet address. The wallet address consists of a pair of public and private keys for the *i*th traveler, denoted by  $K_{T_i}^{pub}$  and  $K_{T_i}^{pr}$ , respectively. Therefore, the wallet consists of the following parameters:



$$\omega_i = \langle U_{cred}^i, P_s^i, HC, MT, TW \rangle \quad (1)$$

where  $U_{cred}^i$  credential specifies the user credential for user  $i$ ,  $P_s^i$  indicates the details of the previous booking, HC shows the history of the previous travel destination and MT shows the transaction status, It means the  $C_i$  encryption that the traveler uses to make the payment. Then, the credit  $U_{cred}^i$  is divided into the following parameters:

$$U_{cred}^i = \langle ID_i, Name, Photo, add \rangle \quad (2)$$

where  $ID_i$  stands for digital ID, name, photo; And the rest is the name, photo and address of the passenger. This data is used to log in and register in the passenger blockchain program.

### Passenger registration

Every passenger  $T = (T_1, T_2, \dots, T_i, \dots, T_{n-1}, T_n) \quad i \in (1, N)$  has  $K_{T_i}^{pub}$  and  $K_{T_i}^{pr}$  respectively. Users should store  $K_{T_i}^{pr}$  safely and locally with them.  $K_{T_i}^{pub}$  is used to create a virtual address specified by  $v_i$ , corresponding to user  $i$ . Then,  $v_i$  is linked to a wallet address using a system-free timestamp value denoted as  $\phi$  and used with the public key  $i$ ; which is as follows.

$$\omega_i \leftarrow H(K_{T_i}^{pub}, \phi) \quad (3)$$

Then, each user generates a unique token associated with the wallet address  $\omega_i$  using their  $ID_i$  as follows.

$$\zeta_i \leftarrow E [K_{T_i}^{pr}, (ID_i // (K_{T_i}^{pub}, v_i, \phi))] \quad (4)$$

The signature  $\zeta_i$  for the  $i$ -th user is related to  $\omega_i$ . Then the user is registered in the secure hotel blockchain network.

### Blockchain contracts

Each passenger in the system has a wallet address and a password associated with the wallet in the blockchain application. The wallet is connected to the traveler through a cryptographic exchange server as shown in Figure 1. As shown in this figure, various smart contracts are executed through the smart contract layer to achieve the desired level of interoperability between users and service providers related to the same chain, to be sure.

### EVALUATION

In this paper, we proposed a blockchain-based secure hospitality framework that enables cooperation and trust among participating stakeholders. Then, a smart contract layer was proposed, which implements various smart contracts to implement communication between tourism stakeholders and tourists.

According to Figure 4, DTCM has estimated the expected revenue growth based on various selected parameters through traditional payment channels. Blockchain outperforms conventional methods, but lacks large-scale practical deployment due to a lack of skilled blockchain developers.

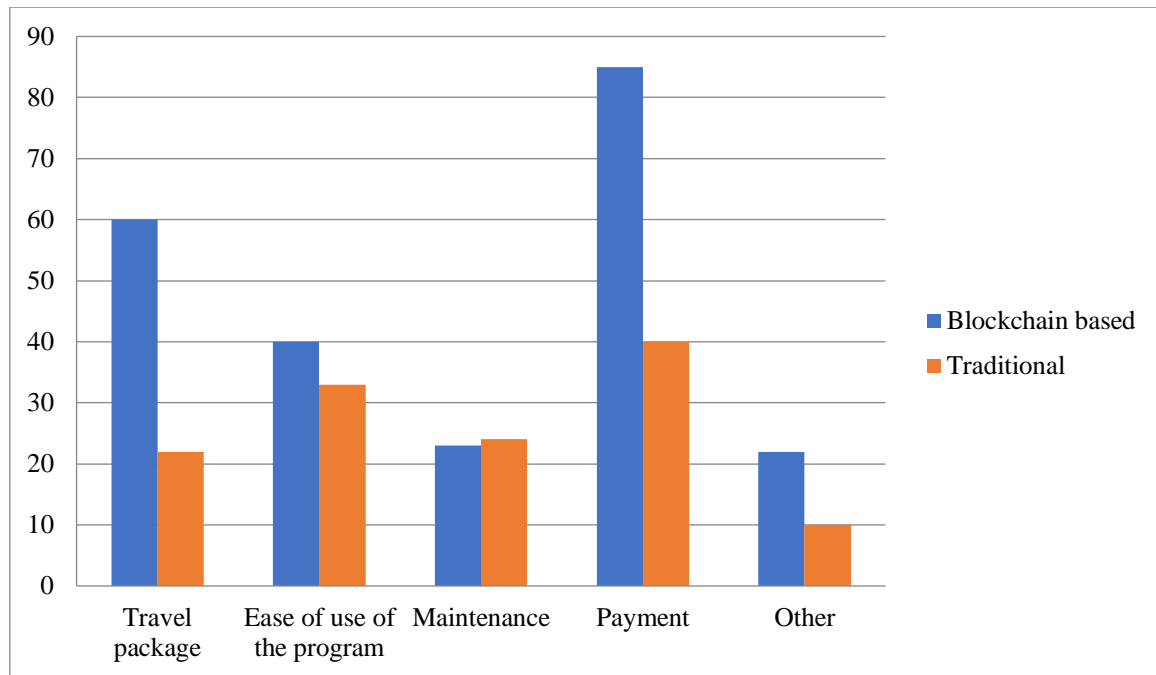


Figure 4: DTCM - project revenue generation through blockchain in the tourism sector [6]

We conducted a survey among 250 users to assess the presence of blockchain in the hotel sector. This research included a review of various researches and opinions on possible impacts and problems. About 78% of the comments showed that blockchain creates good opportunities. In the tourism and hospitality sector, about 72% of the respondents consider blockchain compatibility essential for success in the smart processes of tourism and hospitality.

We have shown the performance effects of different blockchain models in Figure 5, so we can conclude that permissioned or private blockchains are more useful in the tourism and hotel industry than public collections such as Bitcoin or Ethereum. will have.

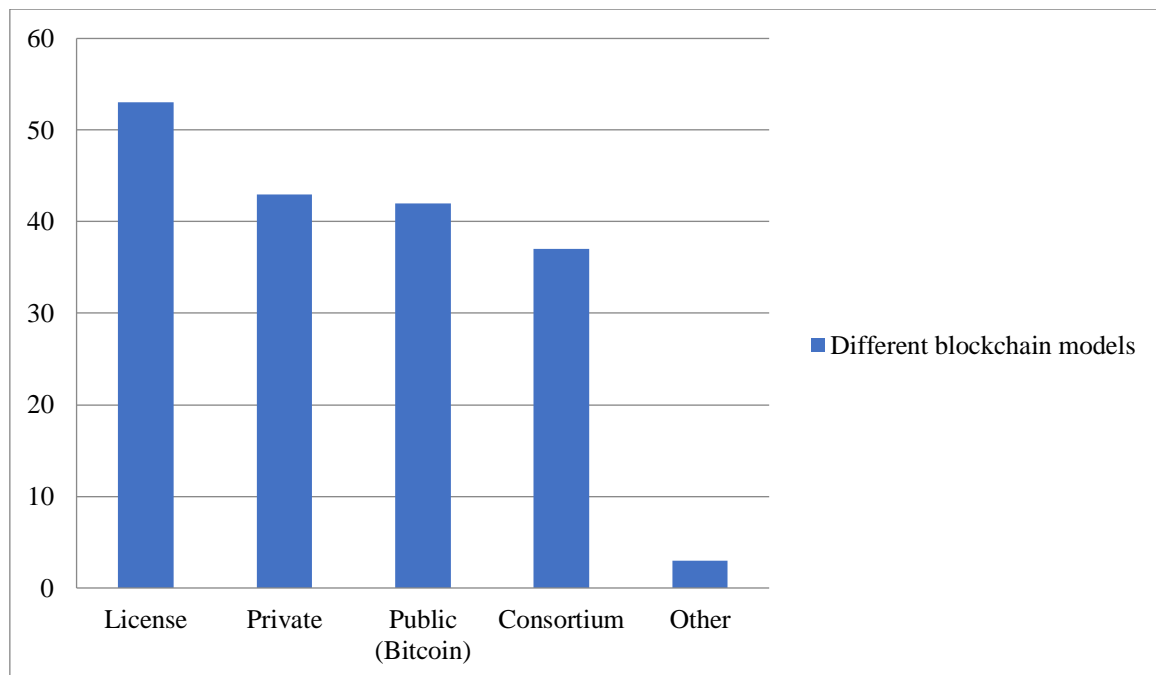


Figure 5: Using different blockchain models and examining its impact [6,8]

In the final evaluation, we will show the level of user satisfaction when using the blockchain-

based electronic wallet and hotel system, in terms of security.

Table 1: Level of users' security satisfaction

	Blockchain based	No blockchain
<b>Information security</b>	%98	%23
<b>Money security</b>	%99	%47
<b>Overall satisfaction with the hotel's operation</b>	%95	%59

## CONCLUSION

The hotel industry, as one of the important branches of the tourism industry, has an important contribution to the expansion of this industry; Therefore, establishing security and evaluating the performance of this department is very important. Although satisfaction and service quality have commonalities, customer satisfaction has a broader concept than quality, because quality focuses on service dimensions. In fact, the perceptions, expectations and preferences of customers are considered as determining factors of customer satisfaction. Today, in order to create satisfaction in their customers, in addition to eliminating the reasons for existing complaints and complaints, hotels must provide high security services to make customers happy. In general, providing safe services to customers is considered to be one of the most important factors in creating differentiation between hotels in a competitive environment. One of the most important things that different age groups attach great importance to is having a sense of security and peace during their stay in the hotel. The hotel must make the necessary arrangements to strengthen the sense of security and peace in its customers and continuously establish security in every aspect of the hotel.

The analysis of the results showed that the use of blockchain in the hotel industry with the aim of increasing the security and confidence of customers has the following advantages:

- **Increasing security:** secure blockchain-based token transfer and money transfer in order to reduce authentication costs, maintenance and distribution of HSM devices, and customer costs including SMS costs, creating security in chain-based transaction processing Replacement block for existing security devices.
- **Increasing efficiency:** creating a platform specific to the hotel, connecting with the desired bank and designing crypto currency.
- **Management of contracts:** P2P contracts, creating mobile software to facilitate and accelerate transactions (financial and non-financial), conducting electronic procurement process with cost reduction on the blockchain platform
- **Improving follow-ups:** preparing and creating customer profiles, and managing customer liquidity and assets.

In the future, we will try to investigate how to implement and run the website for admission, to evaluate the implementation through the evaluation of the quality of the hotel's response to the received emails and to use other sampling methods to conduct similar research.

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