

# Attitudes towards Blockchain Technology in the Hospitality Industry

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HSPT-490: SENIOR CAPSTONE PROJECT

**Attitudes towards Blockchain Technology in the Hospitality Industry**

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## ABSTRACT

Blockchain technology has been making its mark globally in the last decade, benefiting different industries through multiple applications. However, the hospitality industry seems to be falling behind on blockchain adoption.

The present research has investigated blockchain technology from its technical nature, current benefits and applications across numerous industries to the public opinion on blockchain technology and its potential impact on the hospitality industry, namely hotels. This purpose required the creation of online surveys targeting the general population and hotel employees.

Despite its intense development and more frequent global presence, most notably due to its primary application – cryptocurrencies, blockchain technology is still perceived as an emerging technology in the hotel industry. Findings suggest that the general public is slightly more appreciative and experienced in blockchain applications than hotels. Nevertheless, the industry's and public's attitudes regarding blockchain's potential in hotels are mostly aligned.

The results support the proposition of blockchain technology supporting hospitality businesses and their stakeholders in many ways. This study could help hospitality professionals realize the possibilities and value of blockchain adoption.

*Keywords:* blockchain technology, blockchain benefits in hotels, attitudes toward blockchain in hotels, hotel industry, cryptocurrencies

## **GENERAL SITUATION IN THE WORLD**

The world is becoming more fast-paced than ever due to the ongoing technological changes in the economy. Businesses are either welcoming or adapting to the digital transformation, changing their course of action in pursuing profit and customer satisfaction. Management needs to realize the value of digital technology and its creative proportions that can take their companies to the next level (Alehno, 2021). Therefore, organizations compete for new and investment-worthy creativity that human capital can offer in the digital world.

The Global Financial Crisis in 2008 disrupted the economy and left a detrimental gap between financial institutions and their customers' trust. Banks proved unreliable in advising and acting responsibly in mortgage markets and investment management. People lost confidence in banks and financial institutions, which created an opportunity for alternative forms of money systems. Accordingly, Satoshi Nakamoto, an unknown person or group of people, created cryptocurrencies as a new method of payment. "A cryptocurrency is a medium of exchange that is digital, encrypted and decentralized", meaning it is not issued or controlled by an authority like the government or has to go through an intermediary like a bank (Ashford, 2022).

People liked making transactions through cryptocurrencies without needing existing financial institutions and intermediaries, who were responsible for worldwide disappointment during the Global Financial Crisis. In the last few years, this notion sparked a rising global interest in cryptocurrencies like Bitcoin and Ethereum. Through such applications, online transactions are sent directly among parties without needing an intermediary ("What Is Blockchain Technology?", 2022). Such an approach to handling digital transactions created a new wave of digitization. The technology that allowed for such applications to come to life is blockchain technology.

Due to its many compelling components, blockchain is aiding various industries like financial services, healthcare, media, and the airline industry. The question is: What role can blockchain play in the hospitality industry? Are existing applications and uses of blockchain materially applicable to hospitality businesses like hotels and restaurants?

## **BLOCKCHAIN TECHNOLOGY**

“Blockchain is a shared, immutable ledger that facilitates the process of recording transactions and tracking assets in a business network. An asset can be tangible (a house, car, cash, land) or intangible (intellectual property, patents, copyrights, branding)” (“What is Blockchain?”, n.d.). The technology is widely accepted and used because it enables a better, faster, and more transparent flow of information accessed by allowed parties (Tapscott & Tapscott, 2017).

Each asset, information, or transaction added to the network is labeled a block of data. Each block is limited in its magnitude of storing information resulting in the need for new ones. A new block is linked to the preceding one, and so on, constructing a chain of blocks enabling better tracking of transactions. All transactions are connected, like pieces of a chain, hence the name ‘blockchain’. Genesis Block is a name for the starting block in a blockchain (Barkel et al., 2021).

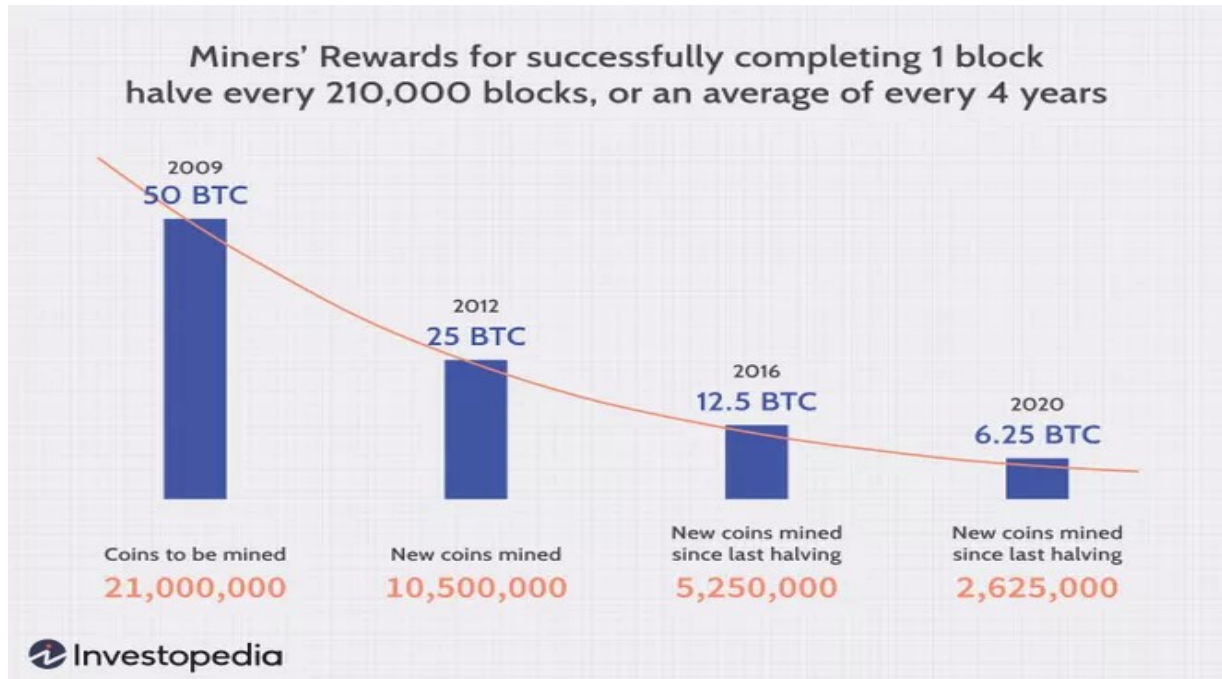
All blocks are recorded in detail containing the date and location of the block, and the identity of the block's owners. No one can change the order of the blocks in any way because of a cryptographic hash, a unique identifier, made of numbers and letters, each block possesses. A hash is responsible for the data privacy, not allowing anyone to enter without a specific code or key (“What Is Blockchain and How Does It Work?”, 2022). Each hash is unique, so any new change in a transaction requires a new code allowing for better tracking of transactions and changes (Barkel et al., 2021).

When someone wants to make a Bitcoin transaction and send a block of data to someone else, the process is less demanding than with third parties like financial institutions. A group of users known as miners or nodes receive a related notification and do a checkup of the transaction to receive a reward in the form of Bitcoin. They have to validate the transaction and sort out a mathematical equation and code to put the block in its intended place in the database without accessing the transaction's content. The reward goes to the miner that validates the block the fastest. Creating a transaction through blockchain is quicker than with an intermediary like a bank ("Blockchain explained... in under 100 words", 2021). This process of validating transactions and attaching new blocks to the chain is also known as Proof of Work (PoW) (Barkel et al., 2021).

The amount received by the miner for a finished job gets reduced by half on average every four years. In the early days of Bitcoin in 2009, mining one block would result in a reward of 50 bitcoins. In 2020, this amount came down to 6.25 bitcoins for mining one block of data ("How Does Bitcoin Mining Work?", 2022).

**Figure 1**

*The decline of miners' rewards from 2009 to 2020*



*Note.* Image by Sabrina Jiang © Investopedia 2021

As stated by Tapscott & Tapscott (2017), blockchain technology consists of six key components:

1. **Immutability** – Blockchain uses cryptography to prevent any forbidden changes in the ledger. All data records must match to approve new ones for the recording. A key/password is needed to access the ledger. The key can be private or public, designed for one person or a group.
2. **Distributed ledgers** – The network is not governed by any authority; no one has complete jurisdiction over the information in the system. The data is inscribed, controlled, shared, and tracked by a group of independent computers. Only people with whom the ledger is shared can access it and its data. It is an example of a peer-to-peer network creating an easier movement of assets among users because all members have a copy of the ledger with all recorded data (Barkel et al., 2021).

3. Increased capacity – Due to high interest and investment, blockchain technology is constantly increasing its amount of independent computers. A greater number of computers allows for a spacious database than the one that standard centralized networks have with limited computing power.
4. Decentralized – Independent computers (the technology's users) manage the blockchain platform instead of a specific authority or institution.
5. Historic – A code connects the information stored in blocks and blockchains, so the user can easily access its asset and related details from day one of entering the network.
6. Fast – Blockchain technology was created to maximize efficiency and save time in processing transactions.

Another relevant blockchain feature is smart contracts, a type of automated contract containing pre-defined rules and conditions to activate the interchange of practically any goods and services (“What Is Blockchain and How Does It Work?”, 2022). As Bucher (2017) explained, two or more parties create an agreement containing the rules on controlling transactions on a blockchain. These terms are written in code and saved on a blockchain. When one of the conditions of the agreement is satisfied, it activates an action that was also agreed. A simple example is that a delivery of goods sets off an instruction to pay for the delivery. Then this action could set off another one, like making a new order of goods.

Smart contracts help companies develop and maintain transparent, reliable, secure, and efficient partnerships. Enabled access control and automated business processes result in greater trust among partner companies (Barkel et al., 2021).



## **CURRENT BLOCKCHAIN APPLICATIONS**

### Finance

Blockchain technology has found its roots in the financial industry. Its encryption attributes allow for a safe and efficient way for international transfers and payments, while the decentralized system allows for quicker transaction validation limiting intermediaries across borders. Using cryptocurrencies eliminates the issue of currency exchange rates. Furthermore, the verification process of blockchain helps prevent any fraudulent activities (Elliott, 2021).

However, there are more industries where blockchain technology is already helping or preparing to do so.

### Supply-Chain Management & Logistics

As one of the consequences of following COVID-19 policies, there have been many setbacks in the supply chain systems worldwide: deplorable infrastructure, closed factories, material and labor shortage, increase in shipping demand, loss of data, miscommunication, and lack of transparency (“Where the supply-chain crisis came from, where it’s going, and when it will be over”, 2021). Blockchain's permanent and unchangeable record-keeping helps businesses with timely product traceability, safe data storing, fast payment processes, and validation.

DHL is one of the leading shipping companies that use blockchain as a digital ledger for its shipments. The company uses blockchain’s smart contracts to diminish back-office errors. DHL creates an agreement with its partners on service procedures and standards, e.g., payment and transborder customs documentation. Through smart contracts, these processes are self-executed without human help. DHL is also looking into using blockchain to handle activities such as managing and tracking goods, escrow agent audits, and contractors’ payment history and score (“Blockchain”, 2022).

## Healthcare

Blockchain technology benefited innovative healthcare companies and institutions by reducing their costs, enhancing businesses processes and information access to stakeholders.

Patientory is a healthcare application using blockchain technology that serves as a medical record system. All necessary stakeholders (patients and doctors from different clinical institutions and services) can access secure and trusted data. The application holds the patient's medical history, additional input from various medical experts, and a communication section for easier interaction among all parties involved. Blockchain eliminates unnecessary paperwork, administrative processes, waiting, and misinformation that patients and doctors usually face. For example, doctors save time by no longer waiting on insurance information. Patients have a clear insight into their condition, requirements, and future medical arrangements (Daley, 2021).

## Media

Media companies implemented blockchain technology to diminish costs, protect intellectual property, and prevent fraud. The prediction is that the world market for blockchain technology in the media industry will hit \$1.54 billion by 2024 ("The growing list of applications and use cases of blockchain technology in business and life", 2022). Thanks to blockchain, a digital asset does not exist in numerous places. It is only accessed and shared by relevant parties while protecting the ownership of an, for example, mp3 file. "Blockchain can maintain data integrity, allowing advertising agencies to target the right customers, and musicians to receive proper royalties for original works" (Daley, 2021).

MadHive is a digital media company using blockchain in efforts of digital advertising and data solution. Blockchain helps marketing experts track and record data regarding customer activity

on their private blockchain. The data is monitored in real-time and aids experts in learning more about their customers to increase sales of interested businesses (Daley, 2021).

### Government

Blockchain technology can help with record and identity management in governmental services. Furthermore, the plan is to use it in voting practices to prevent potential hacking and fraudulent activities due to its encryption and verification components (Daley, 2021).

### Airlines

Several airline companies have recognized the potential in blockchain technology. Singapore Airlines is involved in a loyalty program app Kris+, created for frequent flyers through blockchain. It identifies customer segments, sends them personalized special offers and discounts based on their profile, and ultimately increases revenue (“Singapore Airlines extends its blockchain-based reward digital wallet”, 2020). Air France is currently exploring opportunities with blockchain by testing an app for mobile phones that records customers’ COVID-19 negative tests (“5 Companies Using Blockchain to Change Travel”, 2021).

### Travel

Winding Tree is a private company utilizing Ethereum blockchain to create a decentralized travel marketplace to connect travelers and service providers (e.g., airlines, hotels, tour guides). By eliminating intermediaries such as Expedia or Booking.com, there is immediately minimization of distribution costs and fees associated with those travel agencies. Through smart contracts, providers and buyers gain faster insight and better connectivity at lower expenses. Winding Tree has a cryptocurrency, LIF token (“5 Companies Using Blockchain to Change Travel”, 2021).

Webjet is an electronic travel agency using blockchain technology to track and notify stakeholders of booking inaccuracies. When there is an issue with the booking, customers are usually charged additional fees and hotels with unexpected costs. Preventively, Webjet uses blockchain to safely and accurately records data on the blockchain ledger while also diminishing unnecessary barriers between service providers and customers. The ledger tracks the data in real-time and sends a message to all parties if a problem occurs (“5 Companies Using Blockchain to Change Travel”, 2021).

## **EXAMINING BLOCKCHAIN’S APPLICABILITY IN THE HOTEL INDUSTRY**

Blockchain technology has many elements used in different ways across various industries. Businesses use it to drive profit by increasing efficiency and saving time despite the high investment costs. One of the biggest industries still not using blockchain considerably is the hospitality industry.

The hotel industry is still seeing cryptocurrency as an unconventional form of payment. The Kessler Collection, a luxury hotel brand with hotels in Colorado and Minneapolis, is an example of a hospitality organization accepting Bitcoin, Dogecoin, and Ether as forms of payment (Elliott, 2021). In the past, hotels were being slow in responding to technological changes. For example, they were not as quick as the airline industry on dynamic pricing or revenue management implementation (“Dynamic Pricing – is it in your interest?”, 2019).

However, the hospitality industry is slowly going along with the trend. Hotels are considering using blockchain technology for their loyalty programs, following the example of the airline industry.

Barkel et al. (2021) emphasized many more opportunities that could take the hospitality industry to the next level in its blockchain journey:

- **Tokenization** – Tokenization is the transformation of assets carrying confidential data into non-sensitive data called tokens. If someone breaches the system to get the data, the tokens would be of no value because of their cryptographic nature. Tokens are used in blockchain to give access rights, transfer ownership of assets, or collect rewards as miners do. By using tokens, businesses can use tokens for transactions or loyalty program purposes without needing intermediaries.
- **Lack of a Level Playing Field** – Online travel agencies (OTAs), like Booking.com and Expedia, have the upper hand in reaching customers in the hotel market. Hotel reservations booked through OTAs outnumber reservations made directly through hotels. Even though OTAs help hotels make increased bookings, this comes with lots of fees and a lack of customer insight for hotels. With blockchain technology, hotels could cut out intermediaries like OTAs and make a secure and efficient platform for exchanging information (customer profile, contracts, booking details) and digital assets with customers. It also minimizes the risk of booking errors and additional costs that likely occur by working with OTAs.
- **Decentralized Applications** – Decentralized applications (Dapps) are powered by blockchain technology. They differ from traditional applications by not needing application programming interfaces (APIs). Through API, serving as an interface for different applications, software programs can communicate with each other. For example, a hotel website wants to show its location, so it uses data from Google Maps. Dapps use smart contracts instead of API. Many travel apps are becoming decentralized to reduce the involvement of intermediaries and lower their costs. An example of a travel Dapp is Locktrip which offers a whole trip with flights, and customers can book a stay at 0% commissions. The app uses a Locktoken that customers use for booking.

- **Sharing Economy** – Sharing Economy is a term for peer-to-peer activities: obtaining, providing, and allocating assets and services, usually through an online platform that serves as a connection between buyers and sellers. Slock is a decentralized app providing hospitality and travel services. It utilizes sharing economy by covering the whole payment process: user validation, security of payment, and enhancing the security of Internet of Things (IoT) devices, like a lock on the doors of accommodation.
- **Digital Identity and Data Protection** – Blockchain can enable customers to store all their travel data (e.g., purchasing preferences, payment details, contact information) in one place for booking purposes with various hospitality organizations who have allowed access. This system minimizes costs and complex processes of validating the user's data on each trip's point. Plus, by securing personal data, the blockchain prevents fraudulent activities.
- **Real Rating & Reviews** – Blockchain technology can benefit online reviews by encrypting and securing data. It also prevents efforts of writing fake reviews by enabling a decentralized validation system where only actual customers who experienced the service in question can add their input. An example of such a platform is Keyopass.
- **Payments** – With blockchain, hospitality businesses can lower their costs, protect and speed up their financial transactions by reducing intermediaries' roles, like banks, to validate payments.
- **Loyalty Programs** – Blockchain technology can help hospitality businesses develop loyalty programs efficiently for themselves and their customers. The programs would be transparent, storing important customer information that helps personalize special promotions and activities. It is cost-efficient and easy for businesses to track details of loyalty programs because everything is in one place, and the data cannot be tampered with. Trippki is a hotel that uses blockchain for booking and loyalty program purposes.

- Gamification and Guest Experiences – Many destinations are experiencing difficulties with travelers only visiting the dominant attractions resulting in crowds and unused potential. Gamification through blockchain can lure travelers to visit other destinations and businesses by awarding them points for each visit. KeyoCoin is a technology company practicing this approach where customers are rewarded with cryptocurrencies when visiting a required location or making a purchase.
- Tracking Baggage – In the hospitality industry, there are a lot of lost luggage cases. Blockchain technology can enable better tracking of baggage by attaching codes to luggage items, storing them on the blockchain, and tracking them in real-time.

Is there an opportunity for blockchain technology to further excel in the hospitality industry as well? Specifically, could hotels benefit from implementing blockchain technology?

## **METHOD**

### Purpose

The research aims to investigate public opinion on blockchain technology and its potential impact on the hospitality industry, namely hotels.

### Data Source

Two different groups of participants were targeted for two surveys based on their demographic data. The first group included past or present hotel employees, with no other necessary demographic requirements. The second group was the general public, meaning people with no specific demographic background or prerequisite.

Groups were reached by snowball sampling on social media platforms like LinkedIn, WhatsApp, and Instagram. Participants were asked to further distribute surveys to people they found most suitable for the research.

### Instrument

To find the most relevant data, two surveys were created and used as an instrument for this research. Deloitte's 2021 Global Blockchain Survey served as an inspiration for these surveys. The questions are a combination of the Likert Scale and multiple-choice questions, all written and distributed in English.

The sample size of the research was fifty-five participants in total, twenty-five in the hotel employee sample and thirty in the general population sample. Both surveys were conducted online between April 8th and April 18th, 2022.

The **hotel employee survey**, containing twenty questions, targeted people having past or present hotel work experience. Besides work experience, no other demographic was a prerequisite to participate, like age or gender. This population was selected for their knowledge and experience in the hotel industry. Consequently, they would provide reliable feedback on the potential success of or need for blockchain technology in hotels. Twenty-five participants with hotel work experience ranging in age from 18 to 54 years took part in the study.

The survey contained two yes/no questions inquiring about the participants' familiarity and usage of blockchain technology and two multiple-choice questions on participants' organization plans related to blockchain and to what extent blockchain is taking hold in the hotel industry. Nine questions related to potential benefits associated with implementing blockchain in hotel operations were asked with a 5-point Likert scale accompanied by a "No Opinion" option. Five questions were formulated as statements directed at why blockchain is not used more in hotels. Participants were asked to agree or disagree with each statement on a



5-point Likert scale accompanied by a “No Opinion” option. Sample items include: “There are too many privacy and security concerns regarding blockchain technology.” and “There is a lack of value proposition for hotels (increased benefit for hotels) regarding blockchain technology.” Finally, six demographic questions related to the participant and the hotel at which she/he works were asked with a multiple choice type response.

The **general population survey**, containing sixteen questions, targeted people of no specific demographic or work background. There was no demographic requirement to fill out the questionnaire. This population was selected for their unbiased stance on the hotel industry and its potential connection to blockchain technology. Thirty participants from no specific background took part in the study.

The survey contained two yes/no questions inquiring about the participants’ familiarity and usage of blockchain technology and two multiple-choice questions on participants’ organization plans related to blockchain and to what extent blockchain is taking hold in the hotel industry. Nine questions related to potential benefits associated with implementing blockchain in hotel operations were asked with a 5-point Likert scale accompanied by a “No Opinion” option. Five questions were formulated as statements directed at why blockchain is not used more in hotels. Participants were asked to agree or disagree with each statement on a 5-point Likert scale accompanied by a “No Opinion” option. Sample items include: “In your opinion, there are not many hotel-related professionals who are skilled in blockchain technology.” and “In your opinion, the implementation of blockchain technology in hotels comes with too many regulatory constraints.” Finally, only one demographic question was asked regarding the age of the participants.

## RESULTS

The research was conducted with an intent to investigate if there is a need for and opportunities for blockchain in the hospitality industry, namely in hotels. Furthermore, if existing applications and uses of blockchain are materially applicable to hospitality businesses like hotels.

To find out more, two surveys were created and distributed online between April 8<sup>th</sup> and April 18<sup>th</sup>, 2022. Through snowball sampling on social media platforms, two surveys obtained 55 responses overall. Two different groups of participants were targeted for two surveys based on their demographic data. The first group included past or present hotel employees, with no other necessary demographic requirements. The second group was the general public, meaning people with no specific demographic background or prerequisite.

The **hotel employee survey**, containing twenty questions, targeted people having past or present hotel work experience. Twenty-five participants with hotel work experience ranging in age from 18 to 54 years took part in the study. The majority of the participants (68%) were 18 to 24 years old, while 20% of them were 25 to 34 years old, and 12% were 35 to 54 years old. When asked about their familiarity with blockchain technology, only 12% of participants expressed moderate to extreme familiarity. Most participants, 48% were not at all familiar or were just slightly familiar with blockchain, while 40% were somewhat familiar. The overall mean for blockchain familiarity was 2.44, while standard deviation was 1.08. Similarly, 88% of participants answered negative, when asked if they ever used blockchain or its applications (see Table 1).

The **general population survey**, containing sixteen questions, targeted people of no specific demographic or work background. Thirty participants ranging in age from 18 to 65+ took part in the study. The majority of the participants (60%) were 18 to 24 years old, while 30% of them were 25 to 34 years old, 7% were 45 to 54 years old, and 3% were 65 or older. When asked

about their familiarity with blockchain technology, only 27% of participants expressed moderate to extreme familiarity. A bit more participants, with 33%, were not at all familiar or were just slightly familiar with blockchain, while 40% were somewhat familiar. The overall mean for blockchain familiarity was 2.83, while standard deviation was 1.15. Similarly, 70% of participants answered negative, when asked if they ever used blockchain or its applications (see Table 1).

**Table 1**

*Demographic characteristics of the sample size*

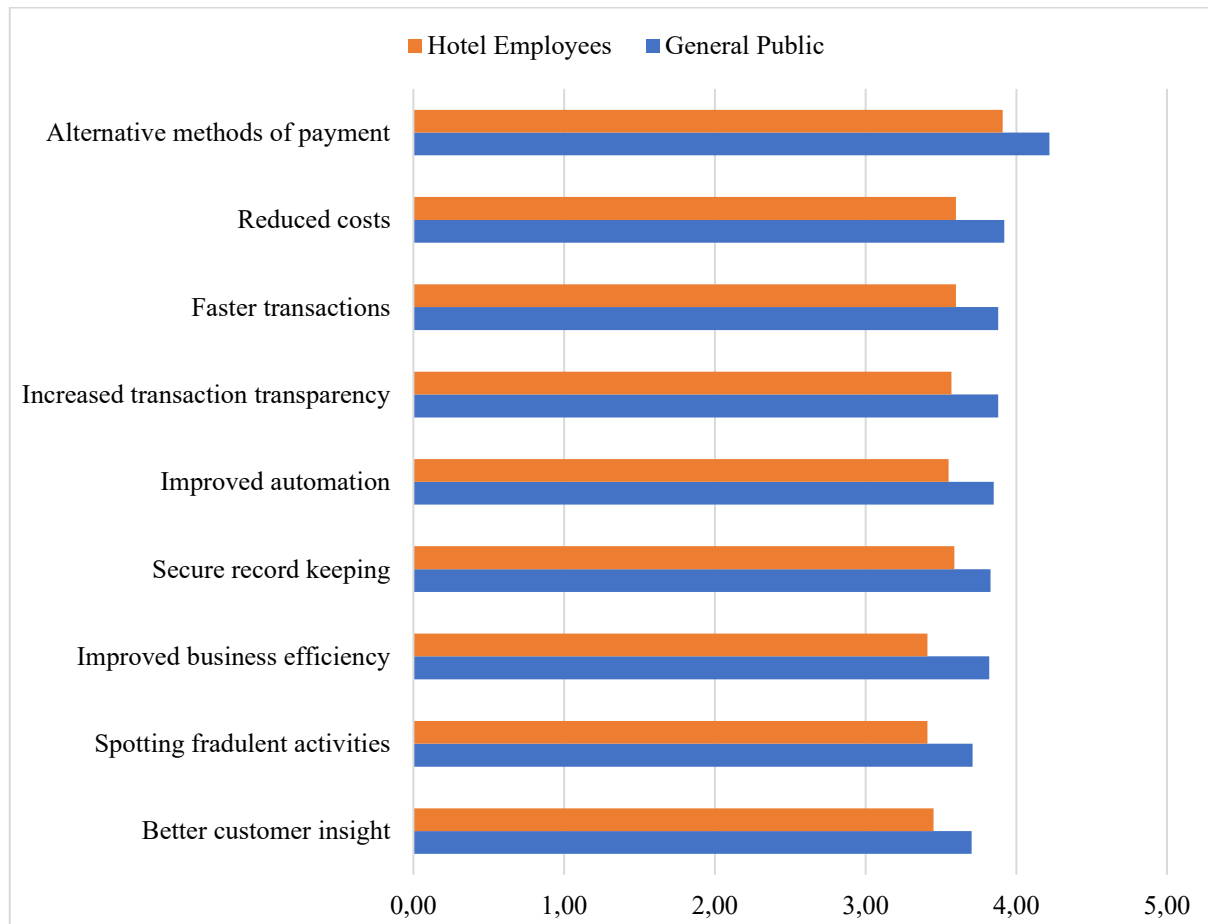
DEMOGRAPHIC CHARACTERISTICS	SURVEY SAMPLE	
	General Population (n=30)	Hotel Employees (n=25)
Age		
18 – 24	18	17
25 – 34	9	5
35 – 44	0	1
45 – 54	2	2
55 – 64	0	0
65+	1	0
Blockchain Familiarity		
Not at all familiar	5	6
Slightly familiar	5	6
Somewhat Familiar	12	10
Moderately Familiar	6	2
Extremely Familiar	2	1
Previous Blockchain Usage		
No	21	22
Yes	9	3

Based on this information, it is clear that the participants in both surveys are members of younger generations. The general population seems to be more familiar and experienced in blockchain technology than hotel employees. In fact, a one-tail t-test reveals that there is a 94.461% chance the general public has a higher usage rate of blockchain technology than hotel employees.

In the same manner, the results show that the general public finds the suggested potential benefits associated with implementing blockchain in hotel operations slightly more beneficial than hotel employees do (see Figure 2).

**Figure 2**

*Difference in the means of samples regarding blockchain benefits in the hotel industry*



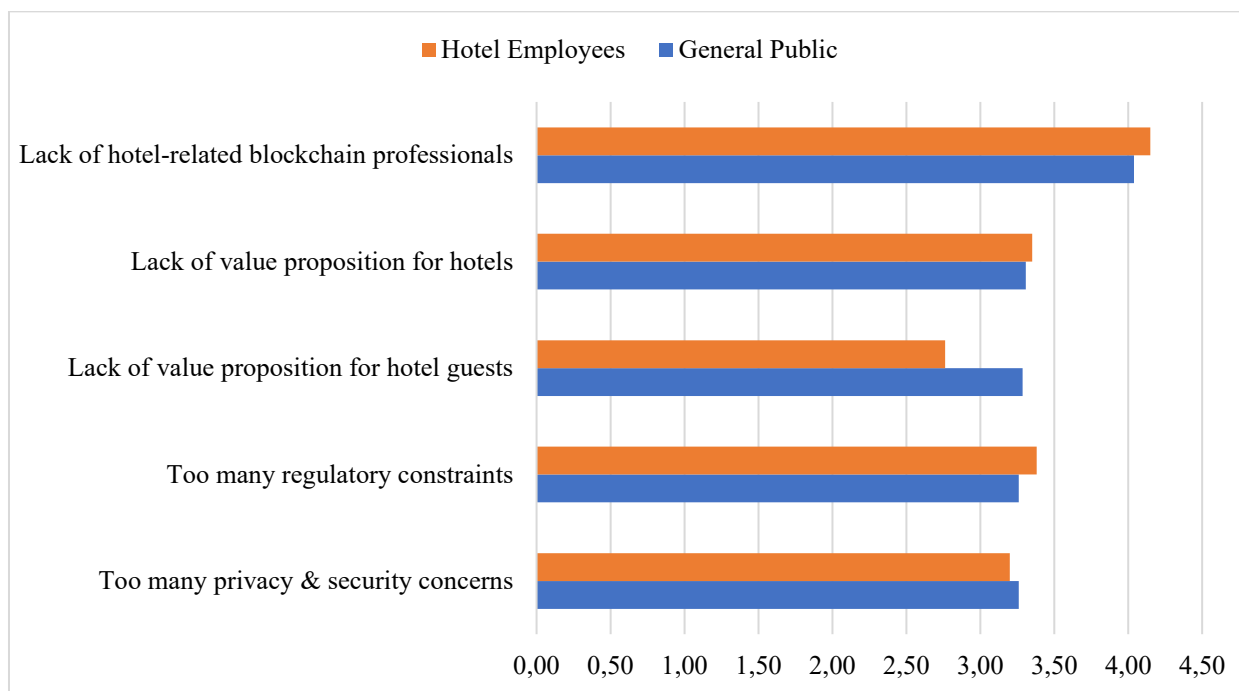
Similarly, both groups of participants were asked to agree or disagree on a 5-point Likert scale with statements that relate to why blockchain is not used more in hotels. Strongly disagree was appointed with number 1 on the far left, and strongly agree with 5 on the far right of the scale. Both samples were closely similar with their answers, except with one statement (see Figure 3).

The general public ( $M = 3.13$ ,  $SD = 1.41$ ) seems to agree more with the following statement than do hotel employees ( $M = 2.76$ ,  $SD = 0.89$ ): “There is a lack of value proposition for hotel

guests (increased benefit for guests) regarding blockchain technology.” Specifically, a t-test comparing hotel employees’ and the general populations’ responses were significantly different at the  $p < .10$  LEVEL ( $p = .0921$ ).

**Figure 3**

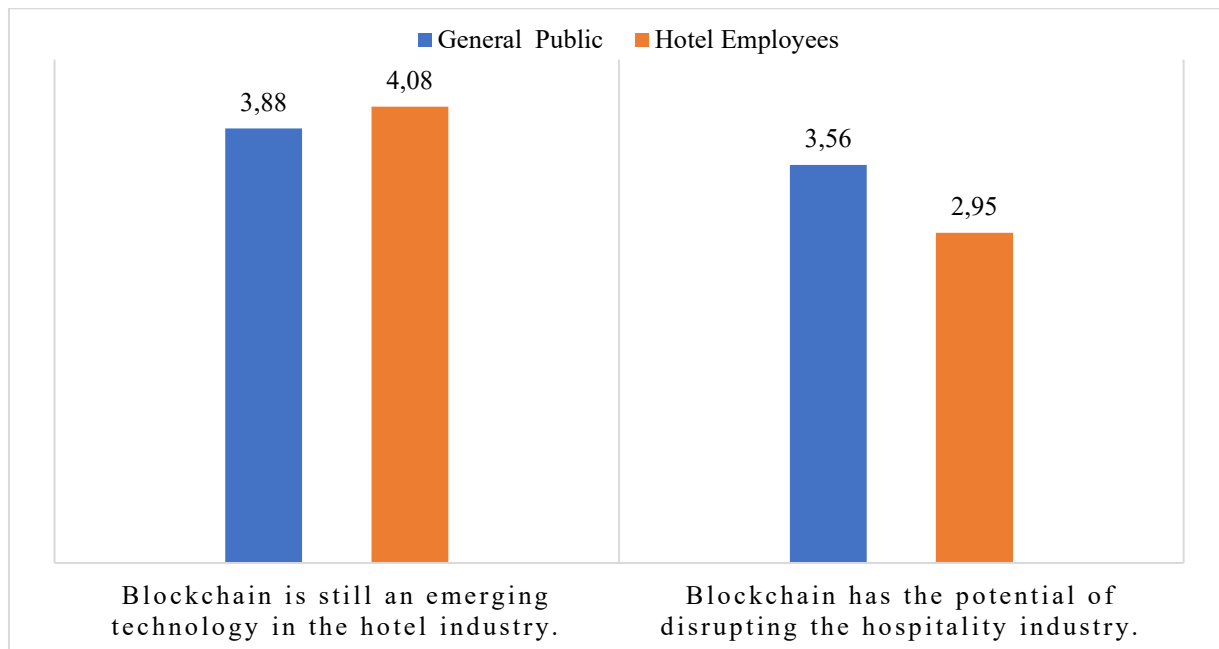
*Difference in the means of samples regarding implementation inhibitors regarding blockchain in the hotel industry*



Regarding the two questions pertaining to blockchain’s potential impact on the hotel industry, no significant differences were found between the two sample groups. To the question “Do you think that blockchain technology has the potential of disrupting the hospitality industry?” (see Figure 4), hotel employees seemed to slightly disagree with the statement ( $M=2.95$ ,  $SD=1.07$ ). On the other hand, the general public leaned more towards agreeing with the statement ( $M=2.97$ ,  $SD=1.59$ ). Conversely, hotel employees agreed ( $M=4.08$ ,  $SD=0.76$ ) with the statement that “Blockchain is still an emerging technology in the hotel industry.” The general public followed with a mean of 3.88 and standard deviation of 0.82 (see Figure 4).

**Figure 4**

*Difference in the means of samples regarding two issues related to blockchain technology*



## **DISCUSSION**

### General Analysis

This study has investigated blockchain technology in terms of its technical nature and current benefits and future application across numerous industries, as well as its potential in the hospitality industry, specifically hotels.

Despite its escalated growth and noticeable global presence in the last decade, most notably due to its main application – cryptocurrencies, blockchain technology is still perceived as an emerging technology in the hotel industry. The general public is slightly more advanced than hotels in terms of using and appreciating blockchain, but there is no significant difference in their views. It could be the case that hotels aren't currently suffering from a lack of involvement in blockchain, so there is no extrinsic compulsion for hotels to engage with the technology. Additional knowledge or interest from their side is unnecessary for the time being. This premise

is supported by the respondents not seeing blockchain as disruptive to the hotel industry. However, if the gap between usage and connection to blockchain increases among these groups increases, then there might be some negative implications for hotels.

This research supports the idea of blockchain technology aiding hotels and all of their stakeholders in various ways. Hotels seem to understand that there is a benefit to it to almost the same degree that the general public does. However, it seems that the main objective that blockchain could bring to the industry – value proposition for hotel guests, is not perceived as conceivable at this point, especially by the general public. The respondents may believe there is currently a lack of value proposition and increased benefits regarding blockchain technology because they have not witnessed it yet. Hotels are falling behind on blockchain implementation and its consideration. From that standpoint, the public and guests are also not asking for it because they aren't aware of the benefits. Consequently, hotels do not provide blockchain applications.

It can be inferred that the world is still quite early on the technology adoption of blockchain, and it is only restricted to other industries for now. The results indicate that blockchain is still in the stage of innovation and early adoption, patiently waiting for the embracement of the rest of the world.

According to Geoffrey Moore in his book “Crossing the Chasm”, there are five stages of technology adoption in terms of its users (customers): innovators, early adopters, early majority, late majority, and laggards. Innovators and early adopters are tech-savvy, captivated by the new technology, and willing to take the risk with this new product because they can fix any potential malfunctions connected with it. On the other hand, the early majority is a larger group of people who will only buy the product if the benefits are guaranteed, and additional services provided by the producer. Usually, it takes a long time and investment for a new product/technology to

cross this chasm from early adopters to the early majority because of their divergent purchasing standards.

However, there might be a way for blockchain to enter bigger market segments as explained by Moore (2002). The company should target a single segment within the early majority group and design the product specifically for this segment, so the benefits are direct and understandable in all aggressive marketing efforts. By capturing this segment, the company could then rely on the peer-to-peer references that would spread to other early majority segments.

Unfortunately, this strategy might not be applicable in terms of blockchain and its applications in the hospitality industry. For example, it would be necessary for one hotel to fully implement cryptocurrencies and serve as an example to others. But cryptocurrencies are not a produce sold by a firm. No one is really in charge of it, so no obvious person or organization could undertake the effort of fully introducing a hotel to the benefits of incorporating cryptocurrencies. Consequently, it might take a while for blockchain technology and its applications to be adopted by the wider public.

### Implications

Considering the increasing curiosity, knowledge, and experience of the general population with emerging technologies, such as blockchain, businesses need to follow their steps, if not outstrip their customers. This research could support hotel managers and other hospitality professionals in understanding the potential and value of blockchain adoption. Even though the results suggest there is no current demand for blockchain from the perspective of businesses and customers, the expansion of the technology in different fields is undeniable. Consequently, it would be of no surprise if it expands to the hospitality world as well. Hospitality representatives should consider some of the benefits associated with blockchain because the general public seems to find it relatively advantageous.



### Limitations

Some limitations of this study should be addressed. The research was restricted to analyzing the benefits of blockchain technology in numerous industries where some of the applications are still in the early stages. Similarly, there are not many hospitality businesses implementing blockchain which could serve as a study case or example of a successful adoption. The technology itself is still in its early stages, so people are not as familiar as it would be preferred for the research.

The scope of the research was limited by the difficulties of reaching the target participants who would have enough knowledge about blockchain and hospitality.

Accordingly, many respondents were members of younger generations who were easily reachable and willing to contribute at the time the research was conducted. Consequently, it is possible that older generations with, for example, more experience and seniority in hotels could provide different views on the matter.

In addition, due to the respondents coming from mostly non-specific educational or work backgrounds, the answers to some questions varied immensely, later supported by the associated high standard deviations.

### Future Research

As blockchain continues to advance and spread, further research should examine if the gap in the familiarity and usage of the technology between the general public and hospitality professionals increases. If the public becomes more knowledgeable on the topic, it is a matter of time before it will expect to witness blockchain in hotels.

On the other hand, further research could investigate in-depth the reluctance and lack of interest regarding blockchain by hospitality businesses. It would be useful to compare the costs of blockchain adoption with its return on investment.

Naturally, the answers to this question would be best found out by evaluating the effectiveness of a hospitality business using blockchain.

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