

Exploring the usage of Cryptocurrency Adoption in The Egyptian Tourism Sector: Opportunities and Challenges

Mennatallah Adel Mohamed Ibrahim

Tourism Studies Department,
Egyptian Higher Institute for Tourism and Hotels

Abstract

Cryptocurrency is revolutionizing the tourism industry by facilitating secure, borderless, and cost-effective transactions, enhancing the convenience of travel and creating new opportunities for innovation and growth in the sector. The research aims to investigate the usage of cryptocurrencies in the Egyptian tourism industry, examining both the opportunities and the challenges. By employing a quantitative method, the study had a sample of 232 tourists in order to examine the degree of influence of overseas trends on the local situations regarding the use of a certain technology and how Egypt may use that technology with regard to the threats attached to it. The findings show a number of prospects which included increased tourists' inflow, improved transaction security and the fact that the country is moving with the world in terms of technology. Nonetheless, the study did face several challenges, which included regulatory ambiguity, excessive volatility in pricing and poor availability of adequate market structures. If these obstacles are overcome, Egypt's tourism sector will be able to comfortably adopt cryptocurrency technology, thus enhancing industry transformation, competitiveness and economic development. This research adds to knowledge on how Egypt can manage these forces in order to harness the adoption of cryptocurrency.

Keywords: Cryptocurrencies, Crypto Opportunities, Egyptian tourism, Crypto challenges

Introduction

Cryptocurrencies (or crypto) are digital financial instruments exchanged and recorded on public ledgers (known as blockchains) that do not require central intermediaries (e.g., commercial banks, central banks) for clearing and settlement. Users and transactions are public but pseudonymous, which means users' identities may be obscured. Initially introduced as payments tools, cryptocurrencies are mostly used as a form of investment such as Bitcoin (crsreports, 2023, P.1). During the year 2018-2019, many tourism operators launched specific programmes to meet the needs of crypto and blockchain enthusiasts. In Edinburgh, Scotland-based CoinsBank wallet provider Blockchain Cruises launched four major cruises in 2019 (Blockchain Cruise'19, 2018). Tourism operators in Queensland, and New Zealand are using Cryptocurrencies as a way of offering programs where tourists can use digital currencies to explore the Great Barrier Reef (Hendry and McGhee,2018).

In addition, countries like Grenada, Cyprus, and the Bahamas are going towards tourists wanting to pay with digital money. The Bahamas was one of the first countries to introduce digital currencies such as the Sand Dollar. Regulators are actively promoting the adoption of this currency at the national level (Bilgen, et al. 2024). Despite the expansion and spread of the digital currency market in the world; and the tourism sector in some countries, they tend to use it as a means of payment for tourists. On the other hand, The Central Bank of Egypt reiterates the warnings it has issued before concerning all types of cryptocurrencies, whether via individuals, businesses,

applications, and platforms. The Central Bank of Egypt stresses that such trading activities on the Egyptian market have not been licensed or authorised for use as a result of their large risks which include but are not restricted to price fluctuations. Additionally, cryptocurrencies are not issued by any central bank or any official centralized issuing authority, that can be held accountable and consequently lack any issuing cover that would guarantee the stability of such currency and protect the rights of its users (The Central Bank of Egypt,2023). This research aims to investigate the usage of cryptocurrencies in the Egyptian tourism industry, examining both the opportunities and the challenges.

Theoretical Study

Cryptocurrencies enable secure exchanges thus easing the exchange of tourism services across borders. It also enables tourists to make purchases without the vice of high transaction costs from currency conversion. Travels can now be made without worrying about the trek they have to make to reach their favorite destination, thanks to the newly developed flexible payment alternatives. Travala and CheapAir have already begun implementing bookings with the use of cryptocurrency. Many places are already allowing the use of cryptocurrency as payment for goods and services. Furthermore, these new currencies greatly improve the development of customer-oriented services in tourism, such as virtual travel and digital cashless bonuses. There is an expectation of an estimated 400 million users by the year 2030 marking a significant impact of cryptocurrencies in the global tourism industry (Zrnić and et al.,2022).

The Concept of Cryptocurrency

In the early 1980s, David Chaum's work laid the foundation for the development of digital currencies and blockchain technology. One of his key contributions was the invention of the “blinding formula,” which allowed for secure digital token transactions without a central authority. Chaum's company, DigiCash, released a digital currency called “eCash” in the 1990s, setting the stage for further blockchain development. Inspired by Chaum's work, developers attempted to create digital tokens with price stability similar to gold (Fu and et al., 2023). This influence can be seen in Bitcoin, which was introduced in 2008 with a planned supply of 21 million coins and a consensus mechanism known as proof-of-work (PoW). The first Bitcoin was mined in 2009, marking the beginning of a new era for digital currencies. The concept of cryptocurrencies, or Digital Money, may be confusing to many consumers. As the use of cryptocurrencies increases, consumers should continue to be careful. Cryptocurrencies, such as Bitcoin, Litecoin, Ether or other currencies, are a form of digital payment that can be used by consumers to buy goods and services (WorldCoin,2023).

It's not issued or backed by government agencies, and it doesn't have any tangible corresponding bills or coins. Cryptocurrency is essentially digital computer software at its core. It may be transferred online without the need for a bank or financial institution by any person or entity. The currency is kept in an electronic wallet, where consumers can store it either on the Internet or offline by using a Hard Disk or Paper Copy. Customers must use government-issued money (or fiat currency) to buy cryptocurrency (Huff and May, 2021). In order to eliminate intermediaries in transactions and shorten transaction times, the use of cryptocurrencies was first introduced. The government or central bank, like the dollar, does not issue and support it; so its value can be volatile. Some are choosing cryptocurrencies because of their anonymity, which enables consumers to make purchases anonymously. Others are choosing cryptocurrencies as an investment, with the hope of increasing their value (The European Parliament's Committee, 2018).

On the website or app of a crypto trading platform, consumers who buy cryptocurrencies will create an account.

There are a number of ways to use the platform, such as: Coinbase, Gemini, Binance, Kraken, and eToro which differ in terms of services offered, charges and costs. Bank transfers, credit cards and money transfer services are usually used to buy crypto. First, it may be useful to verify that your bank will allow transfers through the platform you are using. Although most platforms accept bank transfers, due to the unregulated nature of cryptocurrencies, some banks do not allow this transaction (Berentsen and Schär,2018).

The Applications of Cryptocurrencies in Tourism Sectors Globaly

In recent years, the value of cryptocurrencies has risen and many companies in these sectors have begun to accept payments via cryptocurrencies as well as developing their own tokens due to expected increases in travel and tourism. Cryptocurrencies are the underlying assets of a blockchain, while cryptotokens can be created on established networks. These tokens are created according to different standards for noninterchangeable token that integrate with the Ethereum ecosystem, fulfilling a variety of roles within their platforms (Canidio, 2020). According to recent studies, the most frequent users of cryptocurrencies in any industry or specific business sector are travel companies. Others report that, with blockchain technology enabling tourism companies to facilitate transactions based on cryptocurrencies in place of services, develop loyalty programmes, and tokenise resorts, 58 % of global luxury tourism is increasingly using cryptocurrencies as legal tender (Xie and et al.; 2023).

It has been well documented that cryptocurrency payments provide several advantages, including avoiding intermediaries such as banks and other financial institutions, eliminating credit card fraud during travel , mitigating foreign currency exchange rate risk ; the opportunity to transfer unlimited funds and very low or no transaction fees and the opportunity to immediately execute a transaction compared to several days for conventional credit cards . The use of cryptocurrencies in the tourism sector offers discounts on travel services, increases publicity support and promotes various loyalty schemes(Gubiniová and etal.; 2023). The Dolder Grand Hotel in Zurich, Switzerland, has announced that it will accept bitcoin as a payment method. The hotel said bitcoin was a decentralized digital payment system, and that it had similarities to credit cards. The hotel's proximity to the blockchain and crypto exchanges in Zug and Zurich influenced its choice of support for cryptocurrencies (Elsayed and et al.; 2022).

It highlighted the ease with which Bitcoin can be used as a payment method and attributed its success to the fact that it has found reliable partners in the startup community. It took approximately six weeks for the whole process, from installation to smooth integration. The hotel was given access to a new network of entrepreneurs and contributed significantly to their business (Galang and Ramdhan, 2023). Also, Since starting in 2017, Travala.com has grown from a small startup to the leading service for booking hotels and accommodations using cryptocurrency. It has gained the trust of many customers around the world who choose it as their favorite online travel agency. Travala.com has partnered with Booking.com, a well-known travel booking platform that also supports cryptocurrency. With more than 2 million accommodation options worldwide, Travala.com is helping to widely adopt cryptocurrency. By working with the top digital travel company, Travala.com has added Booking.com's accommodation options to its platform, allowing bookings in over 230 countries and in 90,000 destinations around the world (Kuchechuk and Moiseyenko,2023)

Travala revealed that Tether is already a valid form of payment at their two million linked properties. Besides Tether, Travala also accepts Bitcoin, Ethereum, XRP, Litecoin, Binance Coin, Bitcoin Cash, Stellar, Cardano, and its own coin, AVA (Trobisch and et al., 2022). To guarantee unbeatable prices through its Best Price Guarantee, Travala.com users also enjoy exclusive discounts and loyalty rewards through its tokenized incentives powered by its native utility token AVA(Tumas and et al., 2023). The support of Booking.com toward Travala.com underlines, therefore, what it shares in confidence in this fledgling online travel agency and its commitment to continue supporting digital technology that takes friction out of travel (Sarkodie and et al., 2021). Marriott Worldwide, has been examining how blockchain innovation and cryptocurrencies may be joined into its devotion program. In 2019, Marriott propelled a pilot activity permitting its Bonvoy individuals to trade their dependability focuses for Ethereum, presenting a novel approach for travelers to upgrade the esteem of their rewards (Zheng and et al., 2018).

As cryptocurrency gets progressively coordinated into the travel and neighborliness businesses, we will expect the rise of more imaginative and transformative applications. This incorporates smoother cross-border exchanges, moved forward income era, and the creation of unused decentralized travel booking stages. Clearly, the longer term of tourism is closely associated with the developing impact of digital currencies and blockchain innovation (Seabe and et al.;2023). When it comes to embracing cryptocurrencies for tourists, several countries stand out as being crypto-friendly destinations. These include Australia, Brazil, Malta, Liechtenstein, Bermuda, Switzerland, Antigua and Barbuda, and Georgia. These countries according to (Table 1) offer various services that accept digital currencies, providing a seamless travel experience for crypto enthusiasts (Chancellor and et al.; 2021).

Table 1 : The using cryptocurrency as a payment method in the Travel and Tourism Industry

Airlines	Delta airlines	Source : (Hernandez,2022)
	American Airlines	
	United Airlines	
	Emirates	
	Qantas	
	British Airways	
	Turkish Airlines	
	KLM	
	Air Canada	
	Air France	
	Surf Air	
Online Travel Agencies	Travala.com	Source : (NOWPayments.io, 2024)
	CheapAir.com	
	Destinia	
	airBaltic	
	Bitcoin.Travel	
	eTravelSmart	
	Berkeley Travel	
	XcelTrip	

	LockTrip.com	Source : (binance.com, 2024)
	TUI Group	
	Amadeus IT Group	
	Viajes Titanium	
	Ossiwhite Tours	
	Garbarino	
	Expedia	
Hotels	Palazzo Versace Dubai	Source : (Birch, 2022)
	Soneva hotels, Maldives and Thailand	
	Chedi Andermatt, Switzerland	
	The Pavilions Hotels & Resorts, Europe and Asia	
	Kessler Collection, US	
	Sri Panwa, Thailand	
	FIVE Hotels and Resorts, Switzerland	
	Dolder Grand, Switzerland	
	Manor Hotel by JA, Dubai	

Based on the above, the current research will verify the validity of the following hypothesis:

H1: There is a statistically significant effect of the Global Applications of Cryptocurrencies in Tourism on General Perception and Intention to Use Cryptocurrencies in Egyptian Tourism

The Opportunities of Cryptocurrencies in the Egyptian Tourism Sector:

1- Attracting a New Type of Traveler: Egypt will attract technology conscious and individuals involved in the use of cryptocurrencies since Egypt’s acceptance is likely to accommodate all the financial applications of cryptocurrency. The acceptance of cryptocurrencies by Egyptian travel agencies may increase reaching out to the global that uses cryptocurrencies and can lead to more tourists from abroad (Lo & Singh, 2023).

2- Enhanced Security and Efficiency: By employing blockchain to encourage secure and unprejudiced transactions, digital currencies decrease the probabilities of fraudulent activities as well as chargebacks. Lower fees connected with cryptocurrency transactions in comparison with banking and credit card transactions will be beneficial to businesses and travelers (Zheng and et al., 2018).

3- Increased Financial Inclusion: Cryptocurrencies can also offer an opportunity to spend to tourists originating from countries that have few opportunities to apply for the traditional financial services, to travel and spend in the given country – Egypt. Crypto assets can enhance competition of small and middle-sized tourism enterprises by decreasing transaction costs and providing additional safety, if introduced to the market (Tang, 2023).

4-Marketing and Differentiation: For the Egyptian tourism sector to embrace cryptocurrencies, businesses achieve a competitive advantage by being labeled as unique from competitors and thus attract the innovative niche market. Due to the relatively recent introduction of cryptocurrencies in the commercial market, accepting such payments can be used as the basis for advertising and attracting the attention of the media and consumers (Cahyono and et al., 2023).

5-Streamlined Cross-Border Transactions :These virtual currencies help to avoid difficulties arising from exchanging the currency, restricting the comfort of the international tourists because cryptocurrencies allow for transition to occur electronically during a transaction. It indicated that

payment through Cryptocurrency is fast and can be of value to tourists concerning convenience in conducting their transactions (Nutassey and et al.,2023).

6- Supporting the Digital Economy:The use of cryptocurrencies can act as the trigger for further, deeper, technological adoption in the Egyptian tourism, which would have positive effects on the sector's productivity. In addition to the payment system, blockchains can be employed for other purposes in tourism including the booking system, loyalty programs and tracking goods (Belk and et al.; 2022).

7-Potential for Economic Growth: Adopting cryptocurrencies as legal tender can attract investors to many countries from global cryptocurrency organizations and venture capitalists who want to venture into new markets. By popularizing the spending of cryptocurrencies, this sector can open new opportunities for the tourism industry and boost its revenues with a simple invitation for the holders of such assets to visit Egypt and spend money there (Gursoy and et al., 2022).

8-Supporting Innovation:The acceptance of cryptocurrencies encourages the financial technology companies and other innovative organizations which will help to develop the ecosystem that is required for more number of start-ups. Government Private sector and the international organization can work together by investing and developing crypto-related projects that will change the dynamics of the tourism industry (Qudah and et al., 2023).

9- Using in Metaverse :Physical, augmented, and virtual reality is the future of travel and hospitality represented by the metaverse. The technology that will facilitate this change is blockchain and cryptocurrency which provide solid and transparent systems for the ownership and transacting of assets. As a result, cryptocurrencies and non-fungible tokens (NFTs) will act as the main assets through which people will engage in transactions of digital goods such as virtual hotel rooms, travel and hospitality-related adventures, etc (Zheng and et al., 2017).

The use of blockchain and cryptocurrencies as a value and data storage tool will completely change the existing framework for interaction with customers and income sources in the metaverse applied in the sphere of tourism and hospitality. This will allow travelers to earn rewards in the form of digital assets and gain access to new virtual traveling experiences, that unlock tradable items and benefits. The goal of this approach is to raise the number of tourists, their interest and the level of individualized services in the field of tourism. Previously in the year 2021, Accor entered into a partnership with Decentraland to develop a blockchain-based virtual hotel in Decentraland (Zheng et al., 2018).The Sandbox's metaverse is adding travel-related experiences as accredited by travel firms such as Booking. com and the department of tourism of Saudi Arabia. It is evident that the metaverse will greatly impact the tourism industry and therefore adoption of cryptocurrency/Blockchain technology in the travel and hospitality industries is set to come into force (Gursoy and et al.; 2022).

The subject of academic works highlight the fact that integration of Blockchain technology in the future is not only a technical problem but it is a behavioral one that has a direct relation with the consumers' attitudes as well as behaviors. In this regard, given that the creation of cryptocurrencies is expanding in terms of popularity, a new category of tourists who have advanced technical knowledge is appearing (Patil & Bhosale, 2023). These technology-savvy consumers consciously look for places and organizations that admit cryptocurrencies, which emphatically indicates that tourism is special in this regard. These entities use cryptocurrencies as a way of portraying themselves as progressive and modern, thus being more appealing to the crypto tourists who value convenience and technological solutions (Auer and et al., 2023).

Based on the above, the current research will verify the validity of the following hypothesis:

H2. There is a statistically significant effect of the Global Applications of Cryptocurrencies in Tourism on the Perceived Opportunities of Application Cryptocurrencies in Egyptian Tourism
The Challenges of Cryptocurrencies in Egyptian Tourism Sector:

1- Regulatory and Legal Uncertainty :Throughout the worldwide adoption of cryptocurrencies, the legal status in Egypt is still rather undefined. The Central Bank of Egypt (CBE) has banned the use of bitcoins and warned the public about them stating that they can be used for fraud and money laundering. On December 2018, the CBE classified cryptocurrencies as unauthorized in the facilitation of any form of financial deal in Egypt. This position gives a massive blow to the entities that intend to embrace digital currencies as many regulators are against it (Altman and et al., 2023).

2- Security Concerns :Cryptocurrencies are rather vulnerable to hacking and other cyber risks. Some businesses have poor cybersecurity measures thus exposing both businesses and the tourists to higher risks of financial loss. These factors will help to keep businesses and tourists from using digital currencies due to the high incidents of scams related to it (Gupta and et al., 2023).

3- Price Fluctuations: prices of the various cryptocurrencies tend to move up and down very frequently; this instability might prove to be disadvantageous for companies. The use of bitcoins, especially for acceptance of payment, has its merit in that it can attract many clients as well as a way of incurring maximal loss in that the value of the accepted currency could drastically reduce (Overman and et al., 2018).

4- Limited Acceptance and Infrastructure: There are not many enterprises in Egypt that accept cryptocurrency payments, so they remain somewhat restricted in their application for tourists. The most important precondition for performing crypto operations, i.e., stable internet connectivity and effective payment tools, has not been developed in many regions of Egypt till now (ShruthiKand et al.;2021).

5- Financial Literacy and Awareness :Most businesses and tourists may lack knowledge of or show reluctance in taking up the use of cryptocurrencies due to a lack of understanding of how the technology works and or potential benefits accrued. Another condition that must be met with developing education programs that would help raise awareness and trust in cryptocurrency applications (Gill,2023).

6- Economic and Political Factors :The economic conditions of Egypt play a role in the use of emerging technologies. The organizations may be more concerned with short-term monetary requirements than the new payment systems. The volatility of business also affects the regulations and the desire of companies to try out new financial methodologies (Ricks,2012).

7-Trust and Perception Issues: Transaction in cryptocurrencies is sometimes related to criminal activities, and this affects the extent to acceptable businesses can accept the cryptocurrencies. It is always difficult to gain people's trust in a new and relatively unknown technological solution when most of the market is based on barter in cash and credit (Gokulakrishnan and et al., 2023).

Based on the above, the current research will verify the validity of the following hypothesis:

H3. There is a statistically significant effect of the Global Applications of Cryptocurrencies in Tourism on the Perceived Challenges of the Application of Cryptocurrencies in Egyptian Tourism.

Methodology

1.1. Study variables:

Based on the study hypotheses, a model was created for the study variables, which is shown in Figure No. (1), where the study variables consist of 3 independent variables, which are the impact of the general perception and intention to use cryptocurrencies in Egyptian tourism, the perceived opportunities of application cryptocurrencies and the perceived challenges of using

cryptocurrencies. The study assumes that these variables affect the dependent variable, which is the global uses of cryptocurrencies in the tourism sector.

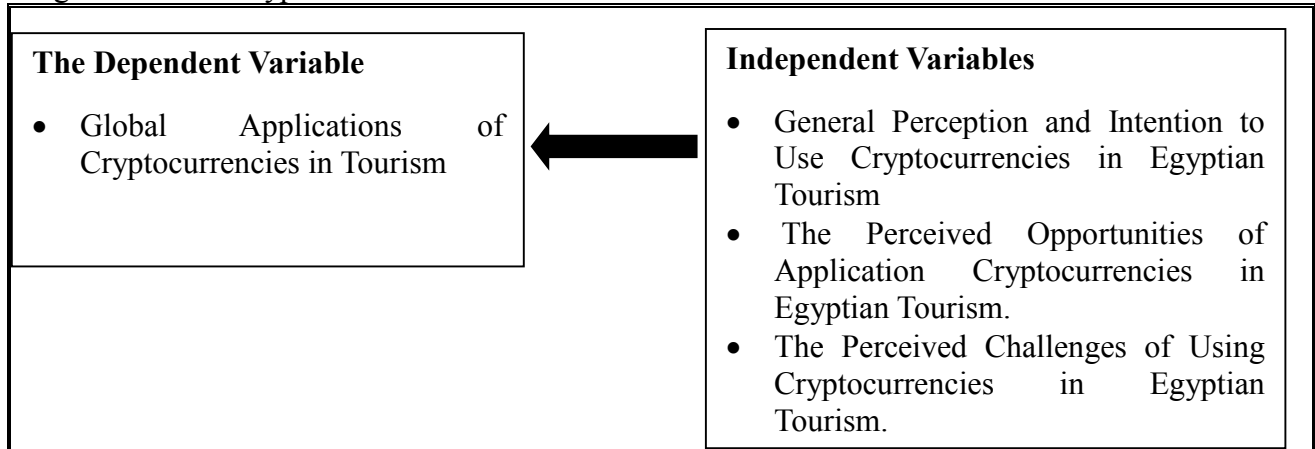


Figure (1) : Study variables

1.2. Data and variables

This research depends on a quantitative approach. A questionnaire form was developed to gather primary data, and questionnaire items were modified from previous research. A 5-point Likert scale questions ranging from 5 (strongly agree) to 1 (strongly disagree) was used to record participants' responses to measure the behavior and preferences of the sample. The questionnaire has 16 questions; Questions were divided into four dimensions according to Table (2). The questions are easy to understand, clear, and do not carry more than one meaning. The questions were arranged in a logical order to help the respondents move from question to question easily and avoid being bored. The final section of the questionnaire included demographic questions, such as gender, age, education level, nationality, and the purpose of travel.

Table (2) : The questionnaire Dimensions

No	The Title of the Dimension	Questions Number
1	Global Applications of Cryptocurrencies in Tourism	4
2	Opportunities of Using Cryptocurrencies in the Egyptian Tourism Sector	4
3	Challenges of Using Cryptocurrencies in the Egyptian Tourism Sector	3
4	General Perception and Intention to Use Cryptocurrencies in Egyptian Tourism	5

The questionnaire was addressed to the tourists. The sample is random. According to Roscoe in 1975 suggested that a sample size greater than 30 and less than 500 is suitable for most behavioral studies (Memon,et al.,2020). The questionnaire was designed on Google Documents, it was distributed online, and collected from January 2024 through June 2024. The questionnaire was distributed to 360 tourists; the number of respondents reached 282 (sample size), the number of incorrect forms was 50 and the number of correct forms was 232. SPSS (26) software is used for data analysis.

1.3. Validity and Reliability of the Variables

The reliability and validity coefficient Cronbach's alpha was used to measure the extent of consistency between the sample items (Taber,2018). The results showed that there is a correlation between the items of the study axes, as the following table (3) shows the values between (0.926 -

0.980), and they are acceptable to all questions and valid for the stages of statistical analysis, and therefore the results of the study can be generalized to the study population.

Table (3) : The reliability and validity coefficient Cronbach's alpha

No	The Title of the Dimension	Questions Number	Cronbach's alpha
1	Global Applications of Cryptocurrencies in Tourism	4	.980
2	Opportunities of Using Cryptocurrencies in Egyptian Tourism Sector	4	.926
3	Challenges of Using Cryptocurrencies in Egyptian Tourism Sector	3	.968
4	General Perception and Intention to Use Cryptocurrencies in Egyptian Tourism	5	.954
Total		16	.985

1.4. Analysis of the Demographic of Sample's Respondents

Table (4)

The Demographic of Sample's Respondents

Variables	Classifications	Frequency	Percentage
1- Age	From 18 To 24	35	15.1%
	From 25 To 34	85	36.6%
	From 35 To 44	72	31 %
	From 45 To 54	25	10.8%
	From 55To 64	8	3.4%
	From 65 and over	7	3%
	Total	232	100%
2- Nationality	USA	43	18.5%
	Australia	18	7.8%
	UK	18	7.8%
	Russia	21	9.1%
	Malaysia	13	5.6%
	Turkey	19	8.2%
	Germany	15	6.5%
	Italy	19	8.2%
	UAE	15	6.5%
	Spain	12	5.2%
	China	13	5.6%
	KSA	26	11.2%
Total	232	100%	
3- Gender	Male	113	48.7%
	Female	119	51.3%
	Total	232	100 %
4- Education Level	Undergraduate	101	43.5%
	Graduate	96	41.4%
	Postgraduate	35	15.1%
	Total	232	100%
5- The Purpose of Travel	Education	50	21.6%
	Culture Exchange	62	26.7%
	Recreational	54	23.3%

	Other	66	28.4%
	Total	232	100%

The table No.4 shows the investigation of sample’s age structure shows that the respondent group is mostly composed of younger adults. The largest proportion of 36.6% can be found in the 25-34 age bracket. This age cohort is expected to be more technologically inclined as they have a lot of exposure to the adoption of technologies such as digital currencies. In reference to this fact, small percentages in older cohorts may mean that cryptocurrency focus is the use of this technology is more suited for younger generations who are less reluctant with technology adoption. The sample features a large number of respondents from different parts of the world, the US (18.5%), Russia (9.1%) and KSA (11.2%) being the most represented. This diversity shows international interest in cryptocurrency which is important for having globally diverse opinions about the issue. The respondents of both developed and developing regions can be assumed to have different degree of awareness and hospitalities towards cryptocurrency, due to different benchmarks of the society and economy.

The sample has fair gender representation, with females considered as the majority at 51.3% and males at 48.7%. Such gender balance indicates that the results pertaining to cryptocurrency adoption are cross-gendered and are most likely to reflect male and female perspectives within the sample. A notable proportion of the sample has bachelor’s degrees (43.5%) and master’s degrees (41.4%), while only a modest proportion has the doctorate degree (15.1%). This distribution shows that the majority of sample participants have a lower level of education which is likely to result in case of a lower knowledge and understanding of cryptocurrency. Higher levels of education may also increase the propensity to use new technologies and financial inventions. The sample reveals multiple reasons for travel with the largest number of the respondents (28.4%) believing they travel for ‘Other’ reasons which could include but aren’t limited to out of the list. ‘Culture Exchange’ comes second with a considerable 26.7% which shows that the respondents had an urge for cross-cultural engagement. Other respondents mentioned their reasons for travel as ‘Recreational’, and ‘Education’ which have also high percentages. Analyzing these travel motivations can provide valuable insights into how cryptocurrency adoption might align with different travel goals, potentially enhancing the travel experience for various types of travelers.

1.5. Analysis of Respondents' Questionnaire

1.5.1. The First Dimension: Global Applications of Cryptocurrencies in Tourism

Table (5) The First Dimension: Global Applications of Cryptocurrencies in Tourism

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. deviation
I am aware of the concept of cryptocurrencies and understand how to use them.	7	10	19	166	30	3.87	0.80076
I acknowledge that other countries’ tourism service providers employ cryptocurrencies; therefore, utilizing them when implementing them in Egypt boosts my confidence.	5	10	19	168	30	3.89	0.75455
In my opinion, the acquisition, production and application of	5	10	15	172	30	3.91	0.74519

cryptocurrencies by airlines, hotels and travel agencies increases my travel comfort and interest.							
I find the global trend attractive and beneficial to travel experiences when using cryptocurrencies, which makes me prefer using them in Egypt	7	10	13	169	33	3.90	0.75308
Mean						3.8976	

For this dimension, the mean score is 3.8976 which reflects that most of the respondents agree on the positive impact of cryptocurrencies on travel such as the ease of integration. The weak standard deviations for most of the statements signify, that most of the respondents had the same view that cryptocurrencies give more ease, more interest, and instill more confidence in traveling. All three types of analyses support the enabling environment for the adoption of cryptocurrencies in the context of the Egyptian tourism industry and are in accordance with global trends and expectations.

1.5.2. The Second Dimension: Opportunities of Using Cryptocurrencies in the Egyptian Tourism Sector

Table (6) The Second Dimension: Opportunities of Using Cryptocurrencies in the Egyptian Tourism Sector

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. deviation
Accepting cryptocurrencies can increase the number of tourists from different countries visiting Egypt.	7	8	13	166	38	3.94	0.79331
Cryptocurrency can prevent currency exchange problems for the international tourist.	3	10	21	167	31	3.92	0.71303
The use of cryptocurrencies will add competitiveness to the Egyptian tourism providers.	3	10	21	168	30	3.91	0.70948
Cryptocurrencies can open up future possibilities for digital economy's development.	3	10	19	163	37	3.95	0.72816
Mean						3.93	

The mean in this dimension stands at 3.93 in table No.6 which reflects a strong agreement on the positive prospects that come with the use of cryptocurrency in the tourism industry of Egypt. The

low standard deviations show that there is a large majority that perceives an increase in the number of tourists, facilitates the currency exchange process, boosts competitive advantage for tourism stakeholders, and supports the digital economy across a number of these statements. This appraisal in turn highlights the expectations that such cryptocurrency would provide in harnessing opportunities for growth and development in Egypt’s tourism sector.

1.5.3. The Third Dimension: Challenges of Using Cryptocurrencies in Egyptian Tourism Sector

Table (7) The Third Dimension: Challenges of Using Cryptocurrencies in Egyptian Tourism Sector

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. deviation
Egypt is still characterized by regulatory and legal risk which I also have reluctance to use cryptocurrencies for tourism and the security risks associated to it.	7	10	15	164	36	3.91	0.81191
Currently, Cryptocurrencies are characterized by volatile prices making them unsuitable for use in relation	7	10	15	170	30	3.88	0.79251
In my opinion, the proper infrastructure for the cryptocurrency transactions in Egypt is still insufficient.	9	10	14	166	33	3.87	0.84418
Mean						3.89	

Describing the third dimension provides additional insights on the limitations regarding the adoption of cryptocurrencies in the tourism sector of Egypt. The assertion ‘Egypt is still characterized by regulatory and legal risk which I also have reluctance in using cryptocurrencies for tourism and security risks associated with it’ received a mean score of 3.91. There were strong sentiments from respondents to the concern stating that there are legal, regulatory and security issues that need to be solved first before the adoption of cryptocurrencies. The standard deviation of 0.81191 reveals a relative agreement among participants of the fear with regards to these risks prompting a call for effective cryptocurrency regulation and security enhancement in tourism practices. Economically, the assertion ‘Currently, cryptocurrencies are characterized by volatile prices making them unsuitable for use in relation’ received a mean score of 3.88 which demonstrated strong agreement that lower volatility is a critical hindrance. The standard deviation of 0.79251 only endorses a common fear regarding the fluctuations of cryptocurrency market movement and how that can make them impractical for transactions related to tourism.

The mean score of 3.87 with respect to the statement “In my view, the proper infrastructure for cryptocurrency transactions in Egypt is still lacking” adds to this belief in the negative direction for the existing infrastructure which is seen as not sufficient for supporting the proliferation of cryptocurrency use. The standard deviation of 0.84418 indicates that there is no divergence of opinion on this issue as well. People agree that there is a need for establishing better infrastructure for safe and reliable cryptocurrency transactions. The results for the stated dimension are also consistent with the rest of the responses where the mean score of 3.89 indicates that there are significant barriers to the use of cryptocurrency in the tourism sector of Egypt.

1.5.4. The Fourth Dimension: General Perception and Intention to Use Cryptocurrencies in Egyptian Tourism

Table (8) The Fourth Dimension: General Perception and Intention to Use Cryptocurrencies in Egyptian Tourism

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. deviation
Adopting cryptocurrencies in Egyptian tourism will enhance the country's global image.	7	10	16	169	30	3.88	0.79462
I believe that the use of cryptocurrencies in Egyptian tourism will lead to increased tourist spending.	7	10	13	172	30	3.89	0.78822
I believe that there is a growing demand among tourists for the option to pay with cryptocurrencies in Egypt, especially in Gen Z.	7	13	12	166	34	3.89	0.82783
The integration of cryptocurrencies can contribute to the tourist experience in Egypt and its advantages overpower its drawbacks.	7	46	92	76	11	3.16	0.90160
I believe that the Egyptian government and financial institutions should support the use of cryptocurrencies in tourism	7	10	15	168	32	3.89	0.79913
Mean						3.7466	

The final perspective of the study addresses the whole perception and the will to use currencies including cryptocurrencies in the Egyptian tourism industry. Respondents have declared that adopting cryptocurrencies in country’s tourism “will improve the country’s image at

international levels” as shown by a mean of 3.88. The opinion also had a standard deviation of 0.79462 suggesting that most survey respondents shared this sentiment. Likewise, the statement “I trust that utilization of cryptocurrencies in Egyptian tourism will increase the tourists’ expenditures” attained a mean score of 3.89 which means there is a strong conviction that cryptocurrencies will enhance tourists’ spending. The very low standard deviation of 0.78822 indeed reaffirms the view that there will be an improved economic outlay in terms of spending due to the use of cryptocurrencies.

Meanwhile, the claim “The integration of cryptocurrencies can contribute to the tourist experience in Egypt and its advantages overpower its drawbacks” has an average score of 3.16 which is significantly lower than the other statement, so this statement does not sound quite appealing. This lower score, as well as a higher standard deviation of 0.90160 for this question, suggests a more extreme attitude about who thinks contributing factors of the cryptocurrencies are more than the factors that may impair the experience of the tourist cycle. This implies that there is indeed a hope or a promise towards the usage of the effectiveness of cryptocurrencies. However, there does exist a significant amount of concern and suspicion towards the attributes of cryptocurrencies. On the other hand, “If I could, I would advocate for the Egyptian government and other relevant financial institutions to endorse the use of cryptocurrencies in tourism” registered a mean of 3.89 indicating a very strong agreement with the requirement of funding for proper integration of cryptocurrency. All in all, with a mean of 3.7466, the focus on this dimension shows caution in expectations regarding the incorporation of cryptocurrencies in Egypt tourism citing problems but optimism towards the benefits.

1.6. The Test of The Study Hypotheses

Table (9) The Test of The Study Hypotheses

The Study Hypotheses	Pearson Correlation	Sig
H1: There is a statistically significant effect of the Global Applications of Cryptocurrencies in Tourism on General Perception and Intention to Use Cryptocurrencies in Egyptian Tourism	0.950**	0.00
H2. There is a statistically significant effect of the Global Applications of Cryptocurrencies in Tourism on the Perceived Opportunities of Application Cryptocurrencies in Egyptian Tourism	0.964**	0.00
H3. There is a statistically significant effect of the Global Applications of Cryptocurrencies in Tourism on the Perceived Challenges of Application Cryptocurrencies in Egyptian Tourism	0.956**	0.00

Note: Correlation is significant at the 0.01 level (2-tailed).

The hypotheses in this research study focus on the global use of cryptocurrencies in tourism and their acceptance and application in the Egyptian tourism economy. The findings show that all hypotheses have strong and statistically significant empirical correlations affirming the existence of global trends and local sentiment towards them.

Hypothesis 1 states that the general perception towards the application of cryptocurrencies in the tourism sector in Egypt has a significant relationship with the application of cryptocurrencies in tourism. The Pearson correlation coefficient pertaining to this hypothesis is 0.950 which is significant at $p= 0.00$ indicating a very high degree of significance. This strong positive

correlation indicates that there are good prospects for the use of cryptocurrencies in Egypt's tourism sector as global awareness and applications of the currencies increase.

Hypothesis 2 seeks to establish the principle that shows the influence of worldwide usage of cryptocurrencies on the opportunities for usage of such tools within Egypt's tourist industry. The Pearson correlation coefficient here is 0.964 as well, which is also significant with a p-value of 0.00. In addition, this explains a higher relationship than what was seen in Hypothesis 1. These results further emphasize how trends tend out in the rest of the world embracing cryptocurrency trends will mean recognition of opportunities within the Egyptian tourism sector. As global applications increase, the understanding of the beneficial impact that cryptocurrency can have on Egypt's tourism sector significantly improves.

Hypothesis 3 investigates the impact of global applications of cryptocurrency medium on the number of perceived limitations to such usage within Egypt's tourist market. The Pearson correlation coefficient for this hypothesis is 0.956 with a p-value of the same in 0.00 which indicates high significance for a negative correlation. This suggests that global practices of cryptocurrencies are also strongly related to how challenges are perceived within the local context as well. The evolution of global applications seems to have an effect on what challenges to the use of cryptocurrency in Egypt's tourism sector are recognized and the evaluation.

Based on these findings, the strong correlation between global cryptocurrency trends and the Egyptian tourism industry's perceptions of both opportunities and threats is apparent due to the strong correlation coefficients and p-viability of the three hypotheses. These findings serve as a reminder of the plurality of global practices and local attitudes and underscore the role of global advancements in determining the usage of cryptocurrency in the tourism business in the future.

Findings

The Research results suggest some adoption of cryptocurrency in the tourism sector of Egypt, with both considerable prospect and threats outlined.

Opportunities:

1. Bringing onboard Tech-bucks: The younger generation, particularly the age range of 25-34 year old tourists which is more acquainted with technological innovations has positive notions towards cryptocurrencies. Egypt can tap into such tourists by implementing cryptocurrency payments and increase international arrivals. This is supported by Lo & Singh (2023), which mentions that the acceptance of cryptocurrencies could significantly attract tourists who are already active in the crypto space, leading to more international arrivals.
2. Improved Safety and Speed of Transactions: Cryptocurrencies come with features like fraud risk reduction, elimination of go-betweens, and instant transactions. This would enhance the travelers' experience by reducing their expenditures and increasing the hassle free issuance of services. Zheng et al. (2018) discuss how cryptocurrencies, supported by blockchain technology, ensure a secure and efficient transaction process, which helps both businesses and tourists.
3. Better Reach: Tourism Cryptocurrencies would allow a wider spending freedom to visitors from nations with poor conventional banking systems which in turn can increase tourism earnings in Egypt. Tang (2023) highlights the role of cryptocurrencies in boosting competition among small and medium-sized tourism enterprises and increasing access to services for underbanked travelers.
4. Promotion and Differentiation: With the adoption of cryptocurrencies, Egyptian Tourism companies would position themselves uniquely in comparison to competitors on the

international sphere and would garner organizational and media attention to niche segments of adventurous tourists. Cahyono et al. (2023) affirm that the novelty of cryptocurrency adoption can provide businesses with a unique market positioning, drawing media and consumer attention.

5. Enhanced Transactions on Cross Borders: Cryptocurrencies allow faster and more enabling cross border payments which can improve the quality of international visitors as well as ease payments for businesses. Nutassey et al. (2023) support this, stating that cryptocurrencies make cross-border payments easier and faster, improving the convenience of transactions for international visitors.
6. Advancing Enterprise Development and Creativity: The approval and usage of cryptocurrency could promote wizardry in technology in Egypt's tourism industry with the growth of such companies and projects that are out of the ordinary. This could lead to economic growth in the sector. Belk et al. (2022) argue that cryptocurrencies and blockchain can enhance various aspects of the tourism sector, promoting the adoption of digital tools to streamline operations.
7. Opportunity for Economic Expansion: The endorsement of the use of cryptocurrencies could be a draw for foreign investors, hence increasing the revenue within the tourism industry. Gursoy et al. (2022) discuss how the adoption of cryptocurrencies as legal tender can attract international investors, driving economic growth within the tourism sector.
8. Connectivity of Metaverse: With the incorporation of blockchain and cryptocurrencies into the metaverse, these technological developments present opportunities for unique virtual travel experiences and purchase of digital assets, which can be applied to entice potential visitors. Zheng et al. (2017) and Gursoy et al. (2022) support the idea that cryptocurrencies and blockchain technology are key enablers in the metaverse, which could significantly reshape the tourism and hospitality industries by providing new virtual travel experiences.

Challenges:

1. Regulatory and Legal Uncertainty: One operational barrier which hampers the use of Cryptocurrencies in Egypt is central law, the biggest being the prohibition about its use by the Egyptian Central Bank CBE. This makes it unclear, thereby posing substantial risks for any business that would consider their adoption. Altman et al. (2023) mention that regulatory uncertainty and legal restrictions, such as those imposed by Egypt's Central Bank, pose a major challenge to cryptocurrency adoption. This aligns with your finding that the unclear legal status of cryptocurrencies is a significant obstacle for businesses.
2. Security Concerns: The possibility of cyberattacks on cryptocurrencies, compounded by the absence of security measures, constitutes a major danger for businesses and tourists owning cryptocurrency on its own. Gupta et al. (2023) support this challenge by discussing how the lack of robust security measures in cryptocurrency transactions increases the risks of cyberattacks and fraud, which is consistent with the concerns raised in your findings.
3. Price Volatility: The unstable nature of the value of the cryptocurrencies makes it a big risk to engage businesses that allow the use of such currencies. Overman et al. (2018) highlights that price volatility is one of the major risks of using cryptocurrencies for transactions, which directly impacts businesses and can deter them from accepting digital currencies. This finding is consistent with your description of cryptocurrency's unstable nature.
4. Limited Acceptance and Infrastructure: The failure of the normalisation of cryptocurrency types in Egypt severely reduces the actual likelihood of tourists or institutions utilising such currencies. ShruthiKand et al. (2021) acknowledge that limited infrastructure and the

lack of widespread adoption of cryptocurrency by businesses are significant barriers to its usage in Egypt. This aligns well with the challenges you've outlined regarding limited acceptance and infrastructure.

5. **Financial Literacy and Awareness:** Not enough understanding and awareness of the Cryptocurrency by businesses and tourists for example means that Cryptocurrency does not penetrate the market to its potential. Gill (2023) discusses the importance of financial literacy and awareness in overcoming barriers to cryptocurrency adoption. This aligns with your finding that a lack of understanding is hindering the widespread use of cryptocurrencies in Egypt.
6. **Economic and Political Factors:** Economic volatility and short sight function can be some of the factors limiting businesses from adapting to advanced payment systems such as cryptocurrencies, more so in a tough regulatory environment. Ricks (2012) emphasizes that economic volatility and political factors can significantly impact the adoption of emerging technologies, which supports your finding that these factors limit cryptocurrency adoption in Egypt's tourism sector.
7. **Trust and Perception Issues:** A general negative attitude against cryptocurrencies due to their links with crime, coupled with people's unwillingness to embrace new technologies, makes it difficult for them to be used in the Egyptian tourism industry. Gokulakrishnan et al. (2023) note that cryptocurrencies are often viewed with skepticism, especially due to their associations with illegal activities, which makes it harder for businesses to build trust with consumers. This corroborates your finding that trust and perception issues are a significant barrier.

Recommendations

1. Egyptian Government (Regulatory Authorities):

From the perspective of a regulation for cryptocurrencies, especially in tourism, a clear and logical framework can be developed that provides some solutions to the issues of security risks, volatility, and possible malicious usage, but also means that the chances of a digital currency being abused while ensuring secure and dependable transactions would be lessened. This framework should spell out how businesses wish to integrate the use of the cryptocurrency payment system into their private industries and allow the protection of the consumers and the operators from cybercrime and fraud during the payment process.

- Action: Engage financial and cybersecurity professionals to develop a legal framework that encourages the expansion in the use of cryptocurrencies while enabling protection of national interests.

2. Tourism Businesses (Travel Agencies, Hotels, Tour Operators): - Introduce testing initiatives in tourist centres, or areas with a high influx of people for the purpose of assessing the effectiveness and the safety of cryptocurrencies for payment purposes. These initiatives will enable the identification of any gaps with the execution of the operations coupled with data that is realistic and can be used to improve the processes before scaling up the integration in the tourism sector of Egypt.

- Action: Collaborate with financial technology firms to facilitate the adoption of safe systems for payment through cryptocurrencies by businesses and tourists and vice versa.

3. Ministry of Tourism And Regulatory Authorities:

For protection against the vulnerabilities of hacking, cryptocurrency companies should contact cyber security firms and devise measures to protect their transactions. This will assist in building confidence in the industry and serve the needs of both tourists and businesses through secure cryptocurrency transactions.

- Action: Offer subsidies to firms that are within the set standards of cyber security and provide cryptocurrency transaction systems that are secure.

4. Telecommunication and IT Providers:

Make sure that while conducting transactions in the tourism industry, the relevant technology is up to standards. This includes improvement of access to the internet in targeted tourist areas and provision of efficient payment systems which accommodates users of cryptocurrency.

- Action: Work together with the state and the players in the tourism industry to formulate a comprehensive plan for the whole country that will prepare the tourism infrastructure of Egypt for the digital economy.

5. Educational Institutions and Training Organizations: Focused educational campaigns for tourism industry business owners, employees and tourists on cryptocurrencies so as to create awareness and understanding on the financial concepts behind it. As the concept of utility, fundamental risks involved and the technicality of cryptocurrency is clear, businesses will be at ease to embrace the use of cryptocurrency and tourists will be at ease to spend its use.

- Action: Launch capacity building or training programs or workshops at universities as well as online platforms to reach out to the tourism industry with techniques of cryptocurrency at ease.

6. International Tourism Organizations and Global Stakeholders: Work alongside international tourism agencies to integrate Egypt's strategy of cryptocurrency use into the world practices. This would help assimilate Egyptian attempts to diversify the usage of digital currencies in tourism to markets that are starting to become more competitive and of interest to tourists who have knowledge of cryptocurrencies.

- Action: Take part in many international forums and discussions relating to the issues of digital currencies and tourism in order to keep pace with the changes and innovations that can be beneficial to the tourism destination of Egypt.

7. Financial institutions (banks and payment processors): Weakly understand their role in the development of cryptocurrency payments – they should indeed work in co-cultural collaboration with the government and touristic businesses. Banks and payment processors should deploy systems which permit, however, tourists to spend money through use of the virtual currencies and that businesses can spend exactly the same amount of time and cost in converting digital currencies into local currency in local outlets.

- Action: Such collaboration will help the underlying tourism sector cut the circumvent the exchange rate risk and ensure that payments are processed in an easily and comfortably manner within the Egyptian context.

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استكشاف استخدام العملات المشفرة في قطاع السياحة المصري: الفرص والتحديات

منة الله عادل محمد ابراهيم
قسم الدراسات السياحية،
المعهد المصري العالي للسياحة والفنادق

الملخص

تعمل العملات المشفرة على إحداث ثورة في صناعة السياحة من خلال تسهيل المعاملات الآمنة والعبارة للحدود والفعالة من حيث التكلفة، وتعزيز راحة السفر وخلق فرص جديدة للابتكار والنمو في هذا القطاع. يهدف البحث إلى التحقيق في استخدام العملات المشفرة في صناعة السياحة المصرية، وفحص الفرص والتحديات. من خلال استخدام أسلوب كمي، أجريت الدراسة على عينة من 232 سائحًا من أجل فحص درجة تأثير الاتجاهات الخارجية على المواقف المحلية فيما يتعلق باستخدام تقنية معينة وكيف يمكن لمصر استخدام هذه التكنولوجيا فيما يتعلق بالتهديدات المرتبطة بها. تظهر النتائج عددًا من الاحتمالات التي تضمنت زيادة تدفق السياح وتحسين أمن المعاملات وحقيقة أن البلاد تتحرك مع العالم من حيث التكنولوجيا. ومع ذلك، واجهت الدراسة العديد من التحديات، والتي تضمنت الغموض التنظيمي والتقلب المفرط في الأسعار وضعف توافر هياكل السوق الكافية. إذا تم التغلب على هذه العقبات، فسيكون قطاع السياحة في مصر قادرًا على تبني تقنية العملات المشفرة بشكل مريح، وبالتالي تعزيز تحول الصناعة والقدرة التنافسية والتنمية الاقتصادية. ويضيف هذا البحث إلى المعرفة حول كيفية قدرة مصر على إدارة هذه القوى من أجل تسخير اعتماد العملات المشفرة.

الكلمات المفتاحية: السياحة، العملات المشفرة، الفرص والتحديات.