

# An Assessment of impact of block chain on UAE economic mechanism

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**Abstract - Adoption of technology by a nation to enhance living standards, ease of doing business, and transparency offers the country a competitive edge. Technologies are assisting nations in a variety of ways to boost economic development by lowering manufacturing costs, introducing new enterprises, and advancing communication. This research tried to examine the influence of block chain technology on the UAE's economic mechanisms. Furthermore, the influence of resident comprehension of block chain on UAE economic mechanisms was studied. According to the study, the UAE government is keen to deploy block chain technology in all fields. However, we can estimate its level of readiness based on the responses. Using blockchain technology for economic development, on the other hand, offers enormous growth and development potential. This has already had an impact on the UAE's government and business sectors. However, as seen by the 4 score, block chain technology is thriving in the UAE. With a marginal rate of 0.89, blockchain technology has a significant impact on economic activity in the UAE, affecting both the public and commercial sectors.**

**Keywords - Block Chain, UAE government, Economic development**

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## INTRODUCTION

### Overview of Block-chain and economy:

Technology adoption by a country to improve living standards of its residents, easy of doing business and improving transparency gives a competitive advantage to the country. Technologies helping countries in many ways to increase economic growth by reducing production cost, bringing new businesses and communication advancements. Economists have mentioned that technology investment are needed to improve the productivity, but many developing countries have not realized the same and invest little on technology.

Blockchain is possibly most important and known technology came out of bitcoin (Swan 2015). However, the importance of the Blockchain does not rely on bitcoin and its very loosely coupled (Buterin 2015). Nakamoto has provided the solution for double-spending problem (which is referred as 'Byzantine General's problem' in subject of computer science) by creating a non-centralized peer-to-peer electronic cash system (Nakamoto 2008). The blockchain is solving this problem by using a decentralized ledger (or database) network which is based on a consensus mechanism (proof-of-work) for change the status of the ledger. Blockchain is better known as a new

"general purpose technology" (Bresnahan and Trajtenberg 1995, Lipsey et al 2005) which can disrupt any centralized system that coordinated valuable information between multiple parties like government money, property title, resident identity etc.

Blockchain adoption by industries (Banking Sector, Real Estate, Government entities) are happening in large scale all over the world. There are multiple use cases are already in use and many of them are being under execution. There are many use cases which are helping directly or indirectly the economic growth of the country and others are to improve customers experience which will add to resident happiness. As per NASSCOM (National Association of Software and Services Companies) report 2019 on blockchain adoption the key findings reported as below

- Blockchain's transformational potential has been recognized by enterprises and governments across the world. More than 50 countries actively creating standards to integrate blockchain in their economies
- About 50% Indian states involved in various blockchain initiatives
- BFSI (Banking, financial services and insurance) at 55% leads adoption; growth

opportunities in retail, logistics, manufacturing and healthcare

Blockchain are relatively new technology but potentially revolutionary which is undergoing the Schumpeterian phases of acceptance and dissemination through the economy, which is a kind of journey towards internet.

**OBJECTIVE OF THE STUDY**

- To analyse the impact of block chain on UAE economic mechanism.
- To assess the impact of resident understanding about block chain on UAE economic mechanism.

**METHODOLOGY**

The research is based on a combination of **primary** and **secondary** research. The primary research will consist of structured interviews of technology leaders who has participated in blockchain related initiatives and quantitatively by distributing a research questionnaire to 500 randomly selected residents covering various nationalities in the UAE.

Therefore, the sample size is 500

Study area is - UAE

The **survey** will be conducted based on standardize **questionnaire** prepared before meeting the respondent and planned well in advance; the respondent will have no flexibility but freely offer feedback on set questions. Each person will be given survey questionnaire and researcher will clearly explain the purpose of the survey. Primary data will be collected from the people that can provide the correct answers which will be appropriate to solve the problem and who represent the whole people the researcher want to study. Therefore, the population of this study consists people who has ever used or aware of any services of which were based on blockchain technology. The population consists of people who are residents of UAE and has stayed here for some time. The researcher will be choosing people from different nationalities with the age more than 18 years.

The primary research data will be checked for reliability and validity of the study and provided the Cronbach Alpha for the data collected. As this research is deductive and quantitative in its nature, one of the important characteristics of deduction is the need to operationalize the variables of the study in a way that facilitate the measurement of facts quantifiably.

The **structured interviews** will be conducted by asking the same questions in the same order, so that it will be easier to compare and contrast the answers. The key consideration will be to have diversity of respondents by various cultural back ground and

should have been involved in blockchain project at various roles. The conversations during interviews will be noted/recorded with the permission of the interviewees and transcribed verbatim during and after fieldwork. Besides these interviews, all of the observation moments were registered in fieldwork diaries. This furthermore it will be extended for coding and analysing all of the data collected through qualitative data analysis software in order to isolate patterns and topics and to define the major research lines. The findings will be articulated and compared with the literature and document analysis.

**RESEARCH HYPOTHESIS**

H1: there is no significant impact of block chain on UAE economic mechanism

H2: there is no significance impact of resident understanding about block chain on UAE economic mechanism

**DATA PROCESSING**

Before processing data, we need to first check the reliability of the scale of the variable at which variables are measured. As mentioned in chapter-3 (research methodology) Cronbach Alpha test is applied to know the score for analyzing the reliability. The following table is giving the glimpse of the outcome and details of the variables.

**Table 1: details of the variables in the study**

1.	Demographic profile	Age
		EDUCATION
		Gender
		Occupation
		Family Size
		Number of dependent
		Income (Annual in AED)
		Social Class
2.	Awareness and understanding of block chain technology among UAE resident	Awareness of Blockchain Technology
		Understanding about Blockchain Technology
		Blockchain Technology is containing trusted approach
		Uses of Blockchain Technology
		Most used Blockchain Technology
		frequency/trading values through Blockchain Technology
		Control over action for Blockchain Technology
		Learning Blockchain technology
		Features are easy to use and operate of Blockchain technology
		Efficient in operating Blockchain technology
		Error while operating Blockchain technology
		Satisfaction with function of Blockchain technology
		Profitability of Block Chain

3.	Resident happiness measures	Trading support
		Uplift your standard of living
		Providing hedge money
		Lost your trading money
		Stress free investment
		Better investment opportunities
		Diversified sources of income
4.	UAE economic development and condition	Employability for individual or community
		Assets for individual or community
		Enhancing per capita income
		Enhancing the social status
		Providing increasing rate of return
		Improved efficiency of the government services
		Better economic growth
		Promoting paperless economy
5.	Block chain influence on economy	Profit share by minimizing the role of intermediaries
		Easiness in entrepreneurial activities.
		Estimation potential annual saving
		Job posting on various social sites
6.	Function assessment and optimality of block chain	Huge level of blockchain technology adoption
		Satisfactory decentralization of technical features
		Encryption in block chain technology
		The distribution of computational power
		Consensus to help the network
		Faster settlement
		Upgrading the security level.
Storage and smooth transfer mechanism.		
Public key infrastructure mechanism		

Table-B is representing the scale reliability score. From the reliability test score, Awareness level constructed by 13 items are reliable as it has higher alpha value (0.79). Because Alpha score more than 0.5 shows a higher value for the scale and construct of the variable. In this case we can move ahead to make a composite variable from those items for the measurement. Furthermore, resident happiness also has 0.721 alpha score having reliable items for the variables.

### DATA ANALYSIS

In the study chapter- three we have following hypothesis to understand and explore the relationship between the variables.

H0: there is no significant impact of block chain on UAE economic mechanism

H0: there is no significance impact of resident understanding about block chain on UAE economic mechanism

To examine these two hypothesis, linear regression model is being applied with the equation of  $E = b_0 + b_1 * BC + b_2 * Aw + u_1 \dots \dots \dots (1)$

There are three table for this assessment.

First table model summary express the variation in model due to included variables. Here R square value is more than .70 (0.78) that infer that 78% of the variation in the model can be expressed by the two variables and they are sufficient to explain the variation in the model.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.780 <sup>a</sup>	.609	.608	.309

a. Predictors: (Constant), Awareness, Blockchain optimality

Second table ANOVA table is representing the model significance based on within and between the variance as f value does have p = .000, that infers the model is signifined to examine the relationship.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	78.232	2	39.116	409.817	.000 <sup>b</sup>
	Residual	50.206	526	.095		
	Total	128.438	528			

a. Dependent Variable: Influence of BCT on UAE economy

b. Predictors: (Constant), Awareness, Blockchain optimality

Third table is related to impact analysis.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.145	.137		1.052	.293
1 Blockchain technology/optimality	.891	.039	.728	22.819	.000
Awareness	.091	.031	.093	2.923	.004

a. Dependent Variable: Influence of BCT on UAE economy

As in coefficient table, p value of Block chain technology is having .000 p value that refers to reject the null hypothesis and suggested to accept the impact of blockchain technology on UAE economic activities in public and private sectors i.e. 0.89 marginal rate. Moreover, awareness among resident also impacts the UAE economic function in positive way with the 0.091 marginal rate at 5% significance level.

### FINDING AND CONCLUSION

The UAE government is eager to use block chain technology in all domains. However, based on the

replies, we can assess its degree of preparedness. Using blockchain technology for economic development, on the other hand, has immense potential for growth and development. This has already had an influence on the UAE's economy's governmental and commercial sectors. However, as seen by the 4 score, block chain technology is doing well in the UAE. Blockchain technology has a substantial influence on economic activity in the UAE, covering both the public and commercial sectors, with a marginal rate of 0.89. The UAE's economic performance is likewise favourably influenced by resident knowledge, with a marginal rate of 0.091 at a significance level of 5%. The efficient functioning of the block chain benefits the UAE's prospective economic growth. Similarly, people's awareness and comprehension of Blockchain technology protects the UAE's future economic prosperity. While knowledge has a slightly favourable influence on resident satisfaction (a rate of 0.426), block chain adoption and functioning have a moderately positive impact (a rate of 0.255).

Another factor to examine is the number of dependents living in the household; persons with a large number of dependents are less acquainted with blockchain technology. Understanding of blockchain technology is positively connected with wealth; high-income individuals comprehend the technology better than low-income ones.

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