

The extent of the impact of big data on social networking applications in digital currencies investment (analytical study on investment in digital currencies in Iraq)

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مدى تأثير البيانات الضخمة على تطبيقات شبكات التواصل الاجتماعي في استثمار العملات الرقمية
(دراسة تحليلية على الاستثمار في العملات الرقمية في العراق)

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Abstract:

The study objective : to achieve the following: Identifying the concept of big data. Clarifying the degree of availability and types of big data on social networks. Measuring the impact of the availability of big data in social networks on investing in digital currencies in Iraq.

Methodology and design: The descriptive analytical method was used in the study, a questionnaire was designed and distributed to the study sample, data was entered and analyzed by SPSS and SMARPLS program and hypotheses were tested.

Result: The study has reached to a set of results: The big data available through social media networks affects the investment choice for the study sample interested in digital currencies, although the data type is characterized by disorganization and lack of reliability in many cases. The speed of transfer of changes in the value of digital currencies and the expected profits contributed to motivating many of those interested in investing to enter the actual investment in digital currencies in Iraq. There is statistically significant effect between big data in social media and investing in crypto-currencies according to the study sample.

Recommendation: Work on following up on more than one means of social communication and taking information from credible people in gatherings, and making sure of it as much as possible. Relying on reliable sources and websites in obtaining investment data and future expectations for the value of digital currencies and not being satisfied with data on social networking sites.

Keywords: big data, digital currencies, investment, data diversity, social networking sites.

المستخلص

هدف الدراسة: تحقيق ما يلي: التعرف على مفهوم البيانات الضخمة. توضيح درجة توافر وأنواع البيانات الضخمة على الشبكات الاجتماعية. قياس تأثير توفر البيانات الضخمة في الشبكات الاجتماعية على الاستثمار في العملات الرقمية في العراق.

المنهج والتصميم: تم استخدام المنهج الوصفي التحليلي في الدراسة ، وتم تصميم استبيان وتوزيعه على عينة الدراسة ، وتم إدخال البيانات وتحليلها بواسطة برنامج **SPSS** و **SMARPLS** ، وتم اختبار الفرضيات.

النتائج: توصلت الدراسة إلى مجموعة من النتائج : تؤثر البيانات الضخمة المتوفرة عبر شبكات التواصل الاجتماعي على اختيار الاستثمار لعينة الدراسة المهتمين بالعملات الرقمية ، على الرغم من أن نوع البيانات يتميز بعدم التنظيم وعدم الموثوقية في كثير من الحالات . ساهمت سرعة تحويل التغيرات في قيمة العملات الرقمية والأرباح المتوقعة في تحفيز العديد من المهتمين بالاستثمار لدخول الاستثمار الفعلي في العملات الرقمية في العراق. هناك تأثير ذو دلالة إحصائية بين البيانات الضخمة في وسائل التواصل الاجتماعي والاستثمار في العملات المشفرة وفقاً لعينة الدراسة.

التوصيات: العمل على متابعة أكثر من وسيلة للتواصل الاجتماعي وأخذ المعلومات من أصحاب المصادقية في التجمعات والتأكد منها قدر الإمكان . الاعتماد على مصادر ومواقع موثوقة في الحصول على بيانات الاستثمار والتوقعات المستقبلية لقيمة العملات الرقمية وعدم الرضا عن البيانات على مواقع التواصل الاجتماعي

الكلمات المفتاحية : البيانات الضخمة ، العملات الرقمية ، الاستثمار ، تنوع البيانات ، شبكات التواصل الاجتماعي

Introduction:

Big data represents an important stage of the development of information and communication systems, and it expresses, in its simplified concept, a huge amount of complex data whose size exceeds the ability of software and traditional computer mechanisms to store, process and distribute it. This led to the development of advanced alternative solutions that enable to control its flow.

Big data technology has the ability to analyze website data and social networking data, as the analysis of this data allows the connections among a set of independent data to reveal many aspects, such as forecasting companies' business trends, fighting crime in the security field and others. Also, these forecasts make innovative tools available for decision makers to understand conditions better and thus make the right decisions that achieve the desired goals. :(Shabbir,etal,2020)

Big data through social media has contributed to stimulating investment in several areas, the latest of which is investing in digital currencies. The importance of the research comes from its focus on the impact of big data on investing in digital currencies. As the phenomenon of investing in digital currencies has spread widely around the world, Iraqis have been greatly affected by it. . (Kamoun etal,2017)

Despite the fact that the data available through social networking sites is largely unorganized and documented, it motivated many Iraqis to try investing in digital currencies, especially since this investment does not require laws and large sums of money. (Lytrasetal,2020)

1. Study Methodology:

1.1 The study problem

The number of social media users in Iraq has increased significantly during the last decade. This increase and the great spread of data in those sites, a remarkable interest in digital currencies has been observed for various reasons, the most important of which is its easy investment. Accordingly, the main problem of the study can be formulated by the following question: Is there an impact of the availability of social media big data on investing in digital currencies in Iraq? A set of sub-problems are derived from the main problem, as follows:

- Is there an impact of the big data volume via social networking sites on investing in digital currencies in Iraq.
- Is there an impact of the velocity of big data in social networking sites on investing in digital currencies in Iraq.
- Is there an impact of the diversity of big data in social networking sites on investing in digital currencies in Iraq..
- Is there an impact of big data Types in social networking sites on investing in digital currencies in Iraq.

1.2: Study Objectives:

The objectives of the study can be defined as follows:

- Identifying the concept of big data.
- Displaying the degree of availability and types of big data on social media.
- Measuring the impact of the availability of big data of social media on investment in digital currencies in Iraq.
- Reaching a set of results and recommendations that could contribute to improving the utilization of big data of social networking sites in investing in digital currencies.

1.3: Study Methodology:

The descriptive analytical method was used in the study, which is one of the suitable approaches to give a clear image of the study problem. In addition, it helps understand the study by clarifying and explaining the relationship between its variables.

1.4: Study Tool:

The study tool was designed in the form of three parts. The first part included the demographic information of the study sample members. The second part included the dimensions of big data variable on social media, which are (size, speed, diversity, shapes). The third part included the dimensions of the investment variable in digital currencies (investment decision, information availability, expected return). However, the questionnaire paragraphs were designed depending on the fivefold Likert model.

1.5: Statistical Methods:

The appropriate analysis method is based mainly on the type of data to be analyzed. The statistical package (SPSS) and structural equations modeling basing on molecular small squares were used. Moreover, the ready-made software (SmartPLS) was adopted to analyze the collected data to achieve the study objectives and test hypotheses. Where the following test methods were used:

- Validity and reliability test of the study tool.
- t-test and mono-variance analysis.
- Path analysis to find the impact level and test hypotheses.

1.6: Study Limits:

The spatial limits of the study are represented by investors in digital currencies in Iraq. However, the temporal limits are represented by the year 2022, which is the year of designing the questionnaire and distributing it on the study sample. The limits of the study were confined by the two variables: the big data on social media variable and the investment variable in digital currencies. Since the society is not defined and dissymmetric, the facilitating or intentional sample was chosen.

1.7 Study community and sample:

The study community is represented by the study community is interested in investing and investors in digital currencies in Iraq. The soft intent sample was relied on, since the community is not defined and not homogeneous. The questionnaire was distributed to the study sample via the Internet, using Facebook pages and other social sites active in the field of digital currency investment. and data was entered into the SPSS programme for analysis and hypotheses testing.

2.Theoretical side:

2.1: The concept and importance of big data

Recently, the world is witnessing an increasing awareness of the importance of big data and its role in enhancing development because it is the new engine that brings about revolutions and changes inside society, especially if it is used carefully and accurately. It offers an unprecedented scope of understanding society and improving lifestyle and practicing business.(Jabbar,2020)

Big data, in its raw form, is usually available in social networking sites. It is a huge amount of complex data that achieves high levels of distribution. Moreover, it is data sources that are huge, greatly fast and highly variant, whose size exceeds the capacity of traditional software and computers to store, process and distribute it. (Hutajulu etal,2019)

It is usually impossible to make use of big data as much as possible, except after processing it by database management tools or traditional data processing applications. This is after it has been collected from multiple sources, formal and informal, internal and external, oral or written. Therefore, it needs to be processed, which is done by collecting, categorizing, arranging, coding, abbreviating, analyzing, scheduling and interpreting, in order to turn into meaningful and useful information that helps in the decision-making process and problem-solving to be called the concept of information. (Kamoun etal,2017)

Gartner Inc., which is specialized in big data and information technology research and consultancy, defines big data as: "large-scale, fast-flow and highly-various information assets that require cost-effective and innovative processing ways to advance insights and decision-making methods."(Kauffmann etal,2020)

The International Organization for Standardization (ISO) defines it as: "A set or sets of data that has unique characteristics (such as size, speed, diversity, variance, validity of data ... etc.), which cannot be processed efficiently by using the current and traditional technology to get benefit of it.(Lytrasetal,2020)

2.2: Types of Big Data on Social Media:

Big data has been divided into a group of types that can be identified as follows:(Shabbir,etal,2020)

- Structured data: is the organization's data in the form of tables or databases for processing it.
- Unstructured data: it constitutes the largest proportion of data, which is generated by people such as texts, images, videos...etc.

- Semi-structured data: It is a type of structured data, but it is not designed in tables, databases, or data.

We can say that most available data on social networking sites is unstructured data, with a limited availability of semi-structured one.

2.3: Elements of big data:

The divisions of the dimensions of big data are different, and the following division can be relied on:

Volume: It is the volume of data extracted from a source, which determines the value and capabilities of the data to be classified among the big data. It may be the most important feature in the big data analysis. Also, describing it as huge does not specify a specific amount. By the year 2020, the cyberspace will contain nearly 40,000 **petabytes** of ready data for information analysis and extraction. Nevertheless, It is estimated that 90% of the world data today has been created during the last two years.(Thomas,2020)

Variety: It means the diversity of the extracted data which helps users, whether researchers or analysts, to choose the appropriate data for their field of research. It includes structured data in databases and unstructured data that comes from its unstructured nature, such as: images, clips, audio recordings, tapes Video, SMS, call logs, GPS data... and others. It requires time and effort to prepare it properly for processing and analysis.(Wang etal, 2020)

Velocity: It means the speed of data production and extraction to cover the demand. Speed is a critical element in making a decision based on this data, which is the time we spend from the moment of data arrival to the moment of decision making based on it.(Xu etal,2016)

Types: It is the type of data that can be obtained, whether it is reliable or unreliable or structured and organized or unstructured and unorganized. All these factors influence greatly the decision-making process in business and investment. (Wang etal,2020)

2.4: The concept of digital currencies

Digitalization has changed everything in our lives: the way of communication, organization, interaction, movement and trade. Rather, it goes beyond the method of purchase and payment and how to count, transfer and store the financial value. In summary, it can be said that digital has changed the form of monetary currency as a medium of exchange and perhaps as a store of account value and unit.

So, a virtual or digital currency is a digital representation of a value that can be electronically transferred, stored or traded. It is not issued by the central bank or public authorities and is not necessarily related to a banknote (dollars or euros...) but people accept it as a means of payment. The most popular digital or virtual currency is Bitcoin. (Piedade,2018).

The process of developing a virtual digital currency from the beginning requires high technological literacy, computer infrastructure and wide-ranging internet infrastructure, with sufficient experience to ensure its successful introduction and adoption. All these are not available for non-governmental agencies. Particular challenges include developing software for an efficient or secure virtual currency, and deploying the means to perform monetary transfers by a virtual currency. (Al-Muntir etal, 2015)

A digital process can be defined as: "a form of virtual currency that is manufactured and stored electronically.

It is also known as intangible currencies that are produced, stored, dealt with and traded electronically in global currency platforms through their estimated value in the market which are only available digitally. (Beate, 2016)

Digital currencies are a set of digital assets which are created by using computer programming languages that rely on complex cryptographic techniques to secure these assets against fraud and hacking. (FATF,2014)

2.5: Investing in digital currencies:

One of the most famous digital currencies is Bitcoin, which has become a popular way of payments for purchases via the Internet and transferring money from one person to another. The way of investing in digital currencies can be as follows:

1. A safe and reliable platform must be chosen.
2. Opening and activating a real trading account.
3. Depositing an amount of money to start trading and investing in digital currencies. (Luca,2019)

2.6 Advantages of investing in digital currencies:

- 1) Crypto-currency is a good opportunity for actual investment that is not available those days in projects in reality.
 - 2) The digital currency provides a shelter for many ideal opportunities through which it gains a lot of profits in the market that is witnessing a global development. (Luca,2019)
- The best way of investment in crypto-currencies is Bitcoin Cash, despite its wide popularity. However, this does not mean that there are not some other coins that can provide the same offer. Other currencies of investment attraction include Cardano and Dogecoin, in addition to some other digital currencies that vary between Ethereum and Chainlink.

2.7 Dimensions of investing in digital currencies:

The most important dimensions can be identified as follows:

- **Investment decision:** When making an investment decision, it must depend on scientific bases. To achieve this, the following steps must be taken:
 - Determining the primary objective of the investment.
 - Gathering the needed information of making decision.
 - Evaluating the expected returns of the proposed investment opportunities.
 - Choosing the appropriate alternative or investment opportunity for the definite objectives. (Liu, 2009)

Therefore, the option of investing in digital currencies is not often subject to in-depth studies by ordinary individuals who have small amounts of money, but rather the investment is made depending on multiple external impacts, the most important of which are the effects of social network sites. (Liu, 2019)

- **Availability of information:** The availability of a huge amount of data about investing in digital currencies and the way to deal with them, and the easy entering this field contributed greatly to stimulating investment in them. (Shaw, 2001)
- **Expected return:** The return achieved from investing in digital currencies has contributed greatly to stimulate investment in them recently. Social networking sites have contributed greatly to news transmission about the digital currencies' returns and the degrees of profits, which significantly affected many investors. (Valacherry, 2018)

3. Analytical framework of the study:

3.1: The model and hypotheses of the study:

The study model shown in Figure (1) was designed basing on the study variables, literatures and reference studies related to the topic, to include the impact of big data of social networking sites on investment in digital currencies in Iraq, and the following figure illustrates the study model:

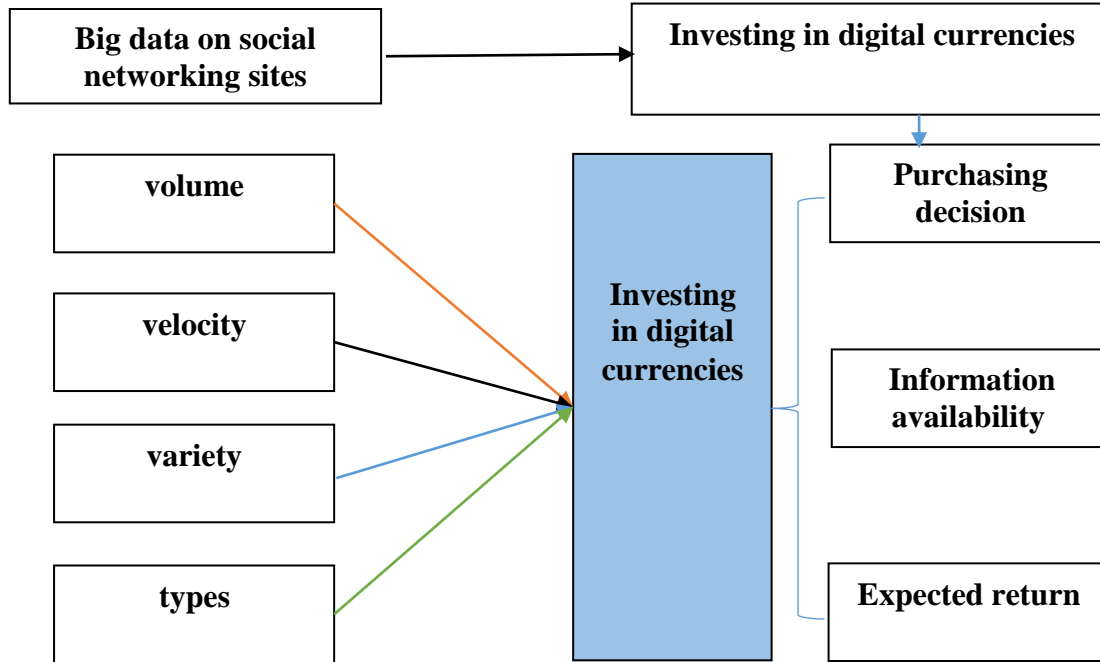


Figure (1) study model

Depending on the study model, the following hypotheses can be developed:

- H1:** There is no statistically significant effect between big data in social media and investing in crypto-currencies according to the study sample.
- H2:** There is no statistically significant effect between volume big data in social media and investing in crypto-currencies according to the study sample.
- H3:** There is no statistically significant effect between velocity big data in social media and investing in crypto-currencies according to the study sample.
- H4:** There is no statistically significant effect between variety big data in social media and investing in crypto-currencies according to the study sample.
- H5:** There is no statistically significant effect between Types big data in social media and investing in crypto-currencies according to the study sample.

Second: Analyzing the demographic characteristics of the study population

Table (1) Features and demographic characteristics of the study sample

Gender							
Female				Male			
%		Number		%		Number	
26.56		34		73.44		94	
Age							
51-75				26-50		18-25	
%		Number		%	Number	%	Number
36.72		47		55.49	71	7.81	10
Study level							
Postgraduate		University		High school		Middle school	
%	Number	%	Number	%	Number	%	Number
10.16	13	58.59	75	15.63	20	15.63	20

Source: Prepared by the researcher based on SPSS results.

Table (1) includes the demographic analysis of the study sample as follows:

- Regarding gender, the number of males was greater than the number of females, due to the response of males in filling up the questionnaire about females. While many females refused to cooperate in filling up the questionnaire.
- With regard to age, the questionnaire was distributed according to age groups distribution. The largest percentage interested in investing in digital currencies is the group that lies between 26-50, with a rate of 55.49%. While the percentage was 36.72.8 for the age group 51-75, and 7.81% for the younger age groups.
- Concerning the academic level, all educational categories were approved for distribution. More focus was on the university graduates' opinions, with 58.59% rate. While 20% was distributed on holders of secondary certificates, 20% to holders of intermediate school certificates and 10.16% on postgraduates

3.2: Validity and reliability of the study tool:

After designing the questionnaire to measure the variables and dimensions of the study and the effect between the independent and dependent variables, the questionnaire was judged by a number of specialists to confirm its validity. As a result, some questions were merged, and others were deleted before distributing the questionnaire to the study sample. The form was distributed to a sample of 128 Among the investors and those wishing to invest in digital currencies in a soft sample manner, since the community is not defined and heterogeneous, and the questionnaire was distributed to Iraqis interested in investments in digital currencies in the governorates of Baghdad and Basra.

The retrieved data were entered into the SPSS programme for analysis. Also, the Alpha Cronbach test was conducted to determine the degree of internal consistency and stability among questions. The test result was as follows:

Table (2) Measuring the internal consistency and stability of the questionnaire questions

Reliability Statistics	
Cronbach's Alpha	N of Items
.882	30

Source: Prepared by the researcher, using the SPSS programme

This means that if the questionnaire, with its different indicators, is distributed at different times to another sample of students at the university other than the study sample, there is a 88% probability of obtaining the same results.

A five-point Likert scale has been used in answering questions directed to the study sample as follows:

Strongly agree	Agree	Neutral	disagree	Strongly disagree
5	4	3	2	1

The arithmetic mean of the Likert scale is $1+2+3+4+5=15/5=3$, which is the value by which the arithmetic mean is compared for each question.

The criteria for judging average responses according to the Likert scale:

Category length = (highest response score – lowest response score)/number of response categories

Category length = $(5-1) / 5 = 0.8$

Accordingly, the closed tab was used, and the following areas were identified:

Table (3) - Five-point Likert Scale of answers

Field	Degree of agreement	Relative importance
1.8-1	Very weak	36-20
2.60-1.81	Weak	52-36.1
3.40-2.61	moderate	68-52.1
4.20-3.41	Strong	84-68.1
5-4.21	Very strong	84.1-100

Source: Assembled by the researcher, based on Asaad (2016)

If the arithmetic mean of the question or expression lies within the range (1-1.8), it corresponds to the "very weak" answer. Meanwhile, if it is within the range (1.81-2.60), it corresponds to the "weak" answer. If it is within the range (2.61-3.40), it corresponds to the "moderate" answer. If it is within the range (3.41-4.20), it corresponds to the "strong" answer. Finally, if it is within the range (4.21-5), it corresponds to the "very strong" answer

3.3: Description of Study Variables:

The study relied on the average means method in collecting data. The arithmetic mean was calculated for each question, then for each independent sub-variable, and then the independent and dependent variables. The results of the arithmetic means and the standard deviation for all variables are as in the following table:

Table(4) Descriptive data for all study variables

Variable	Arithmetic mean	Standard deviation (Std)
volume	3.6	0.754
velocity	3.7	0.958

variety	3.8	0.665
types	3.6	1.110
Big data on social networking sites	3.6	0.628
Purchasing decision	3.6	0.625
Information availability	3.8	0.874
Expected return	3.7	0.889
Investing in digital currencies	3.7	0.739

Source: Prepared by the researcher, using SPSS programme

The table (4) shows the following:

The arithmetic mean of the independent sub-variables (Volume, velocity, variety, types) lies within the range (3.41-4.20), corresponding to the " Strong " answer on the areas of the five-point Likert scale, and with a significant difference. The relative importance of these two independent variables indicates that the sample members agree strongly with the reality of Big data on social networking sites.

The arithmetic mean of the independent variables (Big data on social networking sites) lies within the range (3.41-4.20), corresponding to the "strong" answer on the fields of the five-point Likert scale, with a significant difference. The relative importance of these two independent variables indicates that the sample members agree strongly with the reality of Big data on social networking sites.

The arithmetic mean of the dependent variable (Investing in digital currencies) lies within the range (3.41-4.20), corresponding to the "strong" answer on the five-fold Likert scale, and with a significant difference. The relative importance of this variable indicates that the sample members agree strongly with the reality of Investing in digital currencies.

3.4: Study variables model

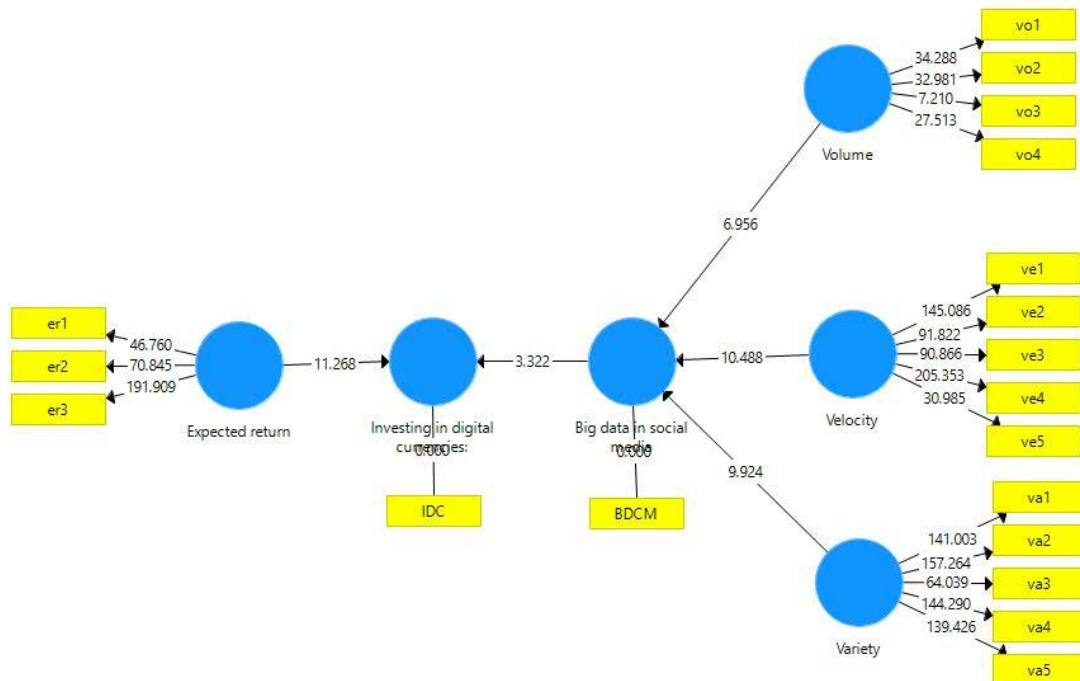


Figure (2): Study variables model

The figure shows the presence of the latent variables forming the study and a set of questions that were asked through the questionnaire.

3.5: Hypothesis Test:

To confirm the validity of the hypotheses, the correlation among variables was studied to examine the correlation and impact of each independent variable on the dependent variable. This was done using the simple Pearson correlation coefficient to study the relationship strength or consistency between two variables. Its value varies in the range (-1, +1) and is symbolized by R. Also, its value is studied in two ways:

1. Algebraic sign: If the sign of the correlation coefficient is positive, then there is a positive relationship between the two studied variables. Meanwhile, if its sign is negative, their relationship is inverse.

2. Absolute value: The absolute value of the correlation coefficient means the relationship between the two variables is strong and can be classified as follows:

The value of the correlation coefficient is the intensity of the relationship.

Table (5): Correlation Coefficient Values

Correlation coefficient	Relationship
$R > 0.90$	Very strong
$0.90 > R > 0.80$	Strong
$0.80 > R > 0.70$	Good
$0.70 > R > 0.60$	Not bad (accepted)
$0.60 > R > 0.50$	Weak
$0.50 > R$	Very weak

Source: Assembled by the researcher, using Assad (2016)

First Hypothesis Test: There is no statistically significant effect between big data in social media and investing in crypto-currencies according to the study sample.

To test the relationship between the dependent and independent variable and to test the first hypothesis, the Pearson correlation coefficient was applied, and the results are as in the following tables:

Table (6): The study of the correlation between big data in social media and investing in crypto-currencies

		Correlations	
		Investing in digital currencies:	Big data in social media:
Investing in digital currencies:	Pearson Correlation	1	.879
	Sig. (2-tailed)		.000
	N	128	128
Big data in social media:	Pearson Correlation	.879	1
	Sig. (2-tailed)	.000	
	N	128	128

Source: Prepared by the researcher, using the SPSS programme

From Table (6): It is clear from the previous table that the value of $R = 0.879$, which means that there is a strong, positive correlation between the two variables, and the value of the probability $P(\text{Sig}) = 0.000 < \alpha = 0.05$. Therefore, the correlation is significant.

Since the value of P is less than the connotation level $\alpha = 0.05$, we reject the first hypothesis and accept the alternative hypothesis: There is statistically significant effect between big data in social media and investing in crypto-currencies according to the study sample.

Second Hypothesis Test: There is no statistically significant effect between volume big data in social media and investing in crypto-currencies according to the study sample. To test the relationship between the dependent and independent variable and to test the first hypothesis, the Pearson correlation coefficient was applied, and the results are as in the following tables:

Table (7): The study of the correlation between volume big data in social media and investing in crypto-currencies

		Correlations	
		Investing in digital currencies:	Volume
Investing in digital currencies:	Pearson Correlation	1	.823
	Sig. (2-tailed)		.011
	N	128	128
Volume	Pearson Correlation	.823	1
	Sig. (2-tailed)	.011	
	N	128	128

Source: Prepared by the researcher, using the SPSS programme

From Table (7): It is clear from the previous table that the value of $R = 0.823$, which means that there is a strong, positive correlation between the two variables, and the value of the probability $P(\text{Sig}) = 0.011 < \alpha = 0.05$. Therefore, the correlation is significant.

Since the value of P is less than the connotation level $\alpha = 0.05$, we reject the Second hypothesis and accept the alternative hypothesis: There is statistically significant effect between volume big data in social media and investing in crypto-currencies according to the study sample.

Thirds Hypothesis Test: There is no statistically significant effect between velocity big data in social media and investing in crypto-currencies according to the study sample.

To test the relationship between the dependent and independent variable and to test the first hypothesis, the Pearson correlation coefficient was applied, and the results are as in the following tables:

Table (8): The study of the correlation between velocity big data in social media and investing in crypto-currencies

		Correlations	
		Investing in digital currencies:	Velocity
Investing in digital currencies:	Pearson Correlation	1	.826
	Sig. (2-tailed)		.000
	N	128	128
Velocity	Pearson Correlation	.826	1
	Sig. (2-tailed)	.000	
	N	128	128

Source: Prepared by the researcher, using the SPSS programme

From Table (8): It is clear from the previous table that the value of $R = 0.826$, which means that there is a strong, positive correlation between the two variables, and the value of the probability $P(\text{Sig}) = 0.000 < \alpha = 0.05$. Therefore, the correlation is significant.

Since the value of P is less than the connotation level $\alpha = 0.05$, we reject the thirds hypothesis and accept the alternative hypothesis: There is statistically significant effect between velocity big data in social media and investing in crypto-currencies according to the study sample.

Fourth Hypothesis Test: There is no statistically significant effect between variety big data in social media and investing in crypto-currencies according to the study sample. To test the relationship between the dependent and independent variable and to test the first hypothesis, the Pearson correlation coefficient was applied, and the results are as in the following tables:

Table (9): The study of the correlation between variety big data in social media and investing in crypto-currencies

Correlations			
		Investing in digital currencies:	Variety
Investing in digital currencies:	Pearson Correlation	1	.842
	Sig. (2-tailed)		.014
	N	128	128
Variety	Pearson Correlation	.842	1
	Sig. (2-tailed)	.014	
	N	128	128

Source: Prepared by the researcher, using the SPSS programme

From Table (9): It is clear from the previous table that the value of $R = 0.842$, which means that there is a strong, positive correlation between the two variables, and the value of the probability $P(\text{Sig}) = 0.014 < \alpha = 0.05$. Therefore, the correlation is significant.

Since the value of P is less than the connotation level $\alpha = 0.05$, we reject the fourth hypothesis and accept the alternative hypothesis: There is statistically significant effect between variety big data in social media and investing in crypto-currencies according to the study sample.

Fifth Hypothesis Test: There is no statistically significant effect between Types big data in social media and investing in crypto-currencies according to the study sample.

To test the relationship between the dependent and independent variable and to test the first hypothesis, the Pearson correlation coefficient was applied, and the results are as in the following tables:

Table (10): The study of the correlation between Types big data in social media and investing in crypto-currencies

Correlations			
		Investing in digital currencies:	Types
Investing in digital currencies:	Pearson Correlation	1	.819
	Sig. (2-tailed)		.000
	N	128	128
Types	Pearson Correlation	.819	1
	Sig. (2-tailed)	.000	
	N	128	128

Source: Prepared by the researcher, using the SPSS programme

From Table (10): It is clear from the previous table that the value of $R = 0.819$, which means that there is a strong, positive correlation between the two variables, and the value of the probability $P(\text{Sig}) = 0.014 < \alpha = 0.05$. Therefore, the correlation is significant.

Since the value of P is less than the connotation level $\alpha = 0.05$, we reject the fifth hypothesis and accept the alternative hypothesis: There is statistically significant effect between Types big data in social media and investing in crypto-currencies according to the study sample.

Results:

1. The arithmetic mean of the independent variables (Big data on social networking sites) lies within the range (3.41-4.20), corresponding to the "strong" answer on the fields of the five-point Likert scale.
2. The arithmetic mean of the dependent variable (Investing in digital currencies) lies within the range (3.41-4.20), corresponding to the "strong" answer on the five-fold Likert scale.
3. The big data available through social media networks affects the investment choice for the study sample interested in digital currencies, although the data type is characterized by disorganization and lack of reliability in many cases.
4. The speed of transfer of changes in the value of digital currencies and the expected profits contributed to motivating many of those interested in investing to enter the actual investment in digital currencies in Iraq.
5. There is statistically significant effect between big data in social media and investing in crypto-currencies according to the study sample.
6. There is statistically significant effect between volume big data in social media and investing in crypto-currencies according to the study sample.
7. There is statistically significant effect between velocity big data in social media and investing in crypto-currencies according to the study sample.
8. There is statistically significant effect between variety big data in social media and investing in crypto-currencies according to the study sample.
9. There is statistically significant effect between Types big data in social media and investing in crypto-currencies according to the study sample.

Recommendations:

The digital currencies witnessed large fluctuations in their value during the previous months, and this led to the loss of some and the decrease in the profits of others from Iraqi investors in digital currencies? And based on the results of the study, the most important recommendations are mentioned as follows:

1. Not to rush to invest in digital currencies, as it is a volatile market that does not unite with clear legal controls to this day.
2. Relying on reliable sources and websites in obtaining investment data and future expectations for the value of digital currencies and not being satisfied with data on social networking sites.
3. Take advantage of those with experience investing in digital currencies by taking their advice, even if it is for a fee.
4. Ensure that more than one source of data is available and work to match them and indicate the degree of compatibility and difference in them.
5. Not to invest huge amounts in digital currencies, and only medium amounts in anticipation of possible large future losses.

6. Work on following up on more than one means of social communication and taking information from credible people in gatherings, and making sure of it as much as possible.

References:

1. Aisha, Aisha Atiq, Syed Ahmed Siti, and Buzayen Al-Ajal. (2016). Testing the median effect of both satisfaction and confidence in the relationship of brand identity to consumer loyalty. Al-Bashaer Economic Journal, Volume Five, Issue 1, p. 226.
2. Al-Muntir, Taqi'ul-Deen, Bitcoinwa Sadaqat al-Jihad(2015): Bitcoin and the Charity of Violent Physical Struggle,"self-published article, August 2104. As of February 26,.
3. Beate Saucer,(2016) Virtual Currencies, the Money Market, and Monetary Policy, International Atlantic Economic Society, Published online: 26 April 2016, P118.
4. Financial Action Task Force (FATF),(2014) "virtual currencies- key Definitions and Potential AML/CFT Risks', June, P.4.
5. Hassan Atallah, and Abdul Razzaq bin Habib. (2021). Studying the direct and indirect impact of the brand's experience on customer satisfaction and trust, using Pls Smart and the importance-performance map. Journal of the Economic Researcher
6. Hutajulu, B., & Harisno. (2019). *Social media influence as an enabler of a sustainable knowledge management system inside PT. ABC organization*. Asian Conference on Intelligent Information and Database Systems, Yogyakarta, Indonesia. https://doi.org/10.1007/978-3-030-14802-7_9

7. Jabbar, A., Akhtar, P., & Dani, S. (2020). Real-time big data processing for instantaneous marketing decisions: A problematization approach. *Industrial Marketing Management*, 90, 558–569. <https://doi.org/10.1016/j.indmarman.2019.09.001>
8. Kamoun-Chouk, S., Berger, H., & Sie, B. H. (2017). Towards integrated model of big data (BD), business intelligence (BI) and knowledge management (KM). In L. Uden, W. Lu, & I. H. Ting (Eds.), *Knowledge management in organizations*. KMO 2017. *Communications in Computer and Information Science*, 731, https://doi.org/10.1007/978-3-319-62698-7_40
9. Kauffmann, E., Peral, J., Gil, D., Ferrández, A., Sellers, R., & Mora, H. (2020). A framework for big data analytics in commercial social networks: A case study on sentiment analysis and fake review detection for marketing decision-making. *Industrial Marketing Management*, 90, 523–537. <https://doi.org/10.1016/j.indmarman.2019.08.003>
10. Liu, J., and D. Pang. (2009). Financial Factors and Company Investment Decisions in Transitional China. *Managerial and Decision Economics* 30: 91–108.
11. Liu, X., Shin, H., & Burns, A. C. (2019). Examining the impact of luxury brand's social media marketing on customer engagement: Using big data analytics and natural language processing. *Journal of Business Research*, 1–12. <https://doi.org/10.1016/j.jbusres.2019.04.042>
12. Luca Marchiori(2019) Monetary theory reversed: Virtual currency issuance and the inflation tax, Op. Cit, P15.
13. Lytras, M., Visvizi, A., Zhang, X., & Aljohani, N. R. (2020). Cognitive computing, big data analytics and data driven industrial marketing. *Industrial Marketing Management*, 90, 663–666. <https://doi.org/10.1016/j.indmarman.2020.03.024>
14. Piedade, Joao Silva, September, (2018), "CRYPTOCURRENCIES: THE FUTURE OF MONEY OR JUST A SPECULATIVE INVESTMENT?".
15. Shabbir, M. Q.,& Gardezi, S. B. (2020). Application of big data analytics and organizational performance: The mediating role of knowledge management practices. *Journal of Big Data*, 7(47), 1–17. <https://doi.org/10.1186/s40537-020-00317-6>
16. Shaw, M. J., Subramaniam, C., Tan, G. W., & Welge, M. E. (2001). Knowledge management and data mining for marketing. *Decision Support Systems*, 31(1), 127–137. [https://doi.org/10.1016/S0167-9236\(00\)00123-8](https://doi.org/10.1016/S0167-9236(00)00123-8)
17. Thomas, A., & Chopra, M. (2020). On how big data revolutionizes knowledge management. In B. George & J. Paul (Eds.), *Digital transformation in business and society*, 39–60. https://doi.org/10.1007/978-3-030-08277-2_3
18. Valacherry, A. K., & Pakkeerappa, P. (2018). Customer knowledge management via social media: A case study of an Indian Retailer. *Journal of Human Values*, 24(1), 39–55. <https://doi.org/10.1177/0971685817733571>

19. Wang, W. Y. C., & Wang, Y. (2020). Analytics in the era of big data: The digital transformations and value creation in industrial marketing. *Industrial Marketing Management*, 86, 12–15. <https://doi.org/10.1016/j.indmarman.2020.01.005>
20. Xu, Z., Frankwick, G. L., & Ramirez, E. (2016). Effects of big data analytics and traditional marketing analytics on new product success: A knowledge fusion perspective. *Journal of Business Research*, 69(5), 1562–1566. <https://doi.org/10.1016/j.jbusres.2015.10.017>