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FACTORS' INFLUENCING DRIVING DEMAND OF CRYPTOCURRENCY AND ITS IMPACT ON BEHAVIORAL INTENTION: AN INDIAN PERSPECTIVE

JYOTI VERMA

Abstract. Investors are gearing up to invest their money into wide range of cryptocurrency choices. However, investors are still somewhat hesitant about the adoption of this virtual currency. Therefore, there is a strong need to find out the reasons by identifying the factors that affect the investors' perceptions towards adoption decisions for investing in cryptocurrencies. New constructs have been identified that will provide value and utility for users of cryptocurrencies. The factors proposed in the model have the greatest influence on the behavioral intention of the investors. Findings highlighted the concerns regarding trust, risk factors, ease of use, and supportive technologies.

1. Introduction

The exponential growth of e-commerce (electronic commerce) has prompted many innovative ways of making online payments for goods and services. People have been using money as a medium of exchange for several years. The term 'online medium of exchange' has evolved from Electronic Funds Transfer (EFT) to plastic money to PayPal and now the new phrase cryptocurrency, which is still in controversy. In 2009, Bitcoin came into existence and became the first decentralized currency which is termed the first cryptocurrency. It is defined as a medium of exchange using cryptography and algorithms to safeguard financial transactions and which has its single universal value. To provide a safe, immutable, and decentralized experience to its users, cryptocurrency is based on blockchain technology, which is an innovative technology (Biais et al., 2019) that shows tremendous growth in a short period. The concept of Blockchain was firstly introduced by Satoshi Nakamoto (Nakamoto, 2008) and it is now a hot topic for all industries including research and development, finance, education, and many more.

The growth of technology-oriented products and services, e-commerce platforms, innovation in virtual platforms, and high use of the internet escalated the creation and adoption of cryptocurrencies. The controversy regarding this virtual currency is the issue of its potential risks and growth. Some people assumed it was the greatest technological breakthrough since the inception of the Internet. Decentralization and immutability are the key features of cryptocurrency as no controlling authority is involved to keep track of transactions and it is so protected with blockchain technology which makes it safe for the transaction as no one can amend the details in the block. The growth of technology, innovation and wide use of the Internet inspired and escalated the creation and adoption of cryptocurrencies as an alternative to fiat currencies. It has shown tremendous growth and the expectation are also on the higher side. The global cryptocurrency market is projected to grow from $910.3 million in 2021 to $1,902.5 million in 2028 at a CAGR of 11.1% in the forecast period, 2021-2028. It has a cryptocurrency market of

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Jyoti Verma, Ph.D., Assistant Professor, Chitkara Business School, Chitkara University, Jansla, Rajpura, Punjab, India. E-mail: jyotiverma17@gmail.com.
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$826.6 million in the year 2020. The following figure 1 represents the growth projections of the cryptocurrency market.

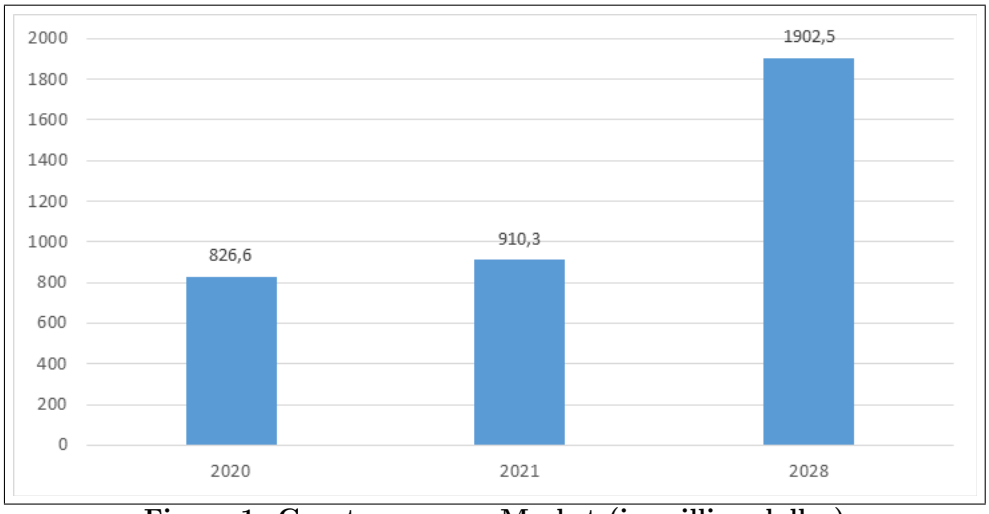

Figure 1: Cryptocurrency Market (in million dollar)

Source: Adopted from Fortune Business Insights Reports (October 2021)

2. Literature Review

Different factors have been studied, so far, in the use of cryptocurrencies (Alaeddin and Altounjy, 2018a; Mendoza et al., 2018; Shahzad et al., 2018), trust (Alaeddin and Altounjy, 2018b; Mahomed 2018a), Behavioral Intention (Roos, 2016), Performance Expectancy (Mahomed, 2018b), Web Quality (Everard and Galletta, 2005) and Perceived Risk (Featherman and Pavlou, 2003) and many more, however, it is necessary to take into account some other variables that affect behavioral intention as an antecedent and that will add a new record in the literature review. Lots of research has been carried out on cryptocurrency and blockchain technology. The above literature review reveals that there exists a wide research gap in the literature and seeing the significant growth of cryptocurrency, necessitates the research to unravel the complexities of the variables under the study. In this study, we try to fill that gap. We investigated the factors influencing investors' adoption behavior of cryptocurrency. When technology is implemented in any industry, it is essential to understand the behavior of investors, which has a direct influence on it. In this sense, this research will propose to include some new constructs and identified new variables in our research model. To develop this model, we have taken a reference from the Technology Acceptance Model (Davis,1985), which is quite an effective and contrasted model for the adoption of new technologies. In this model, the effect of system characteristics on user acceptance of computer-based information systems has been studied. According to Davis (1985), the purpose of this model is to understand user acceptance processes, providing new theoretical insights into the successful design and implementation of information systems. In this model, Behavioral Intention to use technology has as a precedent the Perceived Utility and Perceived Ease of Use together with the attitude towards the adoption of new technology. In the same context, this research provides new constructs namely Social factors (SCF), Risk Factors (RF), Ease of Use (ESU), Supportive technologies (ST), Behavioral Intention (BI), and Trust (TR). Figure 2 (next page) depicts the proposed model of the current study.

In this paper, the impact of these independent variables namely Social factors (SCF), Risk Factors (RF), Ease of Use (ESU), Supportive technologies (ST), and Trust (TR) on Behavioral Intention (BI), which is treated as a dependent variable, has been studied. Therefore, our objectives are as follows:

- To evaluate the scale used to measure the variables under the study.

- To identify underlying factors affecting investors' response to the adoption of cryptocurrency.
- To study the impact of these variables on Investors' Behavioral Intention.

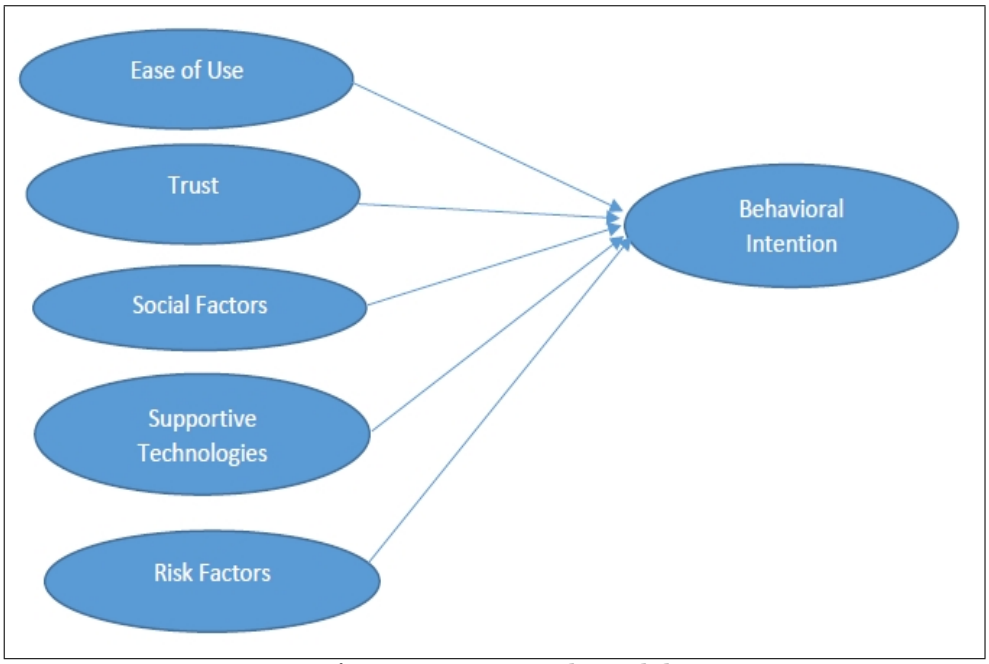

Figure 2: Proposed Model
Source: Proposed Model

After putting the readers in the context of the study through an introduction, background of existing literature, and highlighting the research gaps and objectives, the next sections will describe the research design and tools for data analysis. Thereafter, we will lay out the findings and conclusion.

3. Research Design

To carry out our study we developed a survey, which we subdivided into three sections. The first section consisted of 5 multiple-choice questions relating to demographics, the second section consisted of questions relating to investors' awareness and knowledge about cryptocurrency, and the third section was made up of 22 statements relating to factors influencing investors 'decisions for the adoption of cryptocurrency. Investors were asked to give a response about their level of agreement with the statements using a 5-point Likert scale- '1' being the strongly disagree and '5' being strongly agreed. This survey was conducted online using a dedicated online application software 'Qualtrics, XM (Suen et al., 2014), and administered across various states of India. We received a total of 375 valid responses from Indian investors. The aim is to collect more responses but got 375 valid responses only which is 95% C.I. This was deemed sufficient for carrying out our study based on the rule of thumb of a minimum of 1:4 and a maximum of 1:10 (Deb and David, 2014; Malhotra, 2010) that is a minimum of 88 and a maximum of 220 based on 22 statements in section 2.

Table 1 (next page) represents the respondent's demographic profile. In this research, around 58 percent of the respondents are male, around 35 percent of the respondent's income is in the range of 50001-75000. The majority of the respondents belong to the business community and are well qualified. 76% of the respondents are married.

The data received from this survey was then subjected to Exploratory Factor Analysis (EFA) and the Cronbach Alpha using the IBM SPSS (version 26) application software. We applied descriptive statistics to analyze the participants' demographics. Exploratory factor analysis

(EFA) was applied to determine the grouped factor variables. EFA summarises and groups variables into a set of clusters so that relationships and patterns of variables can be easily interpreted and understood. This helps the reader to understand the data, in a better way, obtained from the self-administered questionnaires, by reducing it, into meaningful categories (Yong and Sean, 2013). To measure the consistency of the developed scale and these grouped characteristics variables, we used Cronbach alpha.

Table 1: Distribution of Respondents

Particulars	**N=375**	**Percentage**
Gender		
Male	217	57.8
Female	158	42.1
Total	**375**	**100**
Monthly Income (INR)		
Less than 25000	53	14.1
25001-50000	114	30.4
50001-75000	129	34.4
More than 75000	79	21.0
Total	**375**	**100**
Occupation		
Businessman or woman	169	45.0
Serviceman or woman	112	29.8
Self-employed	94	25.0
Total	**375**	**100**
Education Level		
Undergraduate	87	23.2
Graduate	134	35.7
Post Graduate	154	41.0
Total	**375**	**100**
Marital Status		
Married	285	76.0
Unmarried	90	24.0
Others	0	0
Total	**375**	**100**
Source: Authors' Compilation		

4. Results and Discussion

Evaluation of Scale - 22 items have been framed after preliminary interviews with experts and a thorough literature review. This scale consists of items that include statements relating to social factors, behavioral intention, trust, risk factors, ease of use, and supportive technologies. These items have been drafted on the basis that they have not been considered in the literature review. For evaluation of the scale, we conducted the Cronbach Alpha to ensure the reliability and validity of the scale used. That is the degree to which the items that make up the scales hang together (Pallant, 2007:95). Results are shown in Table 2 (next page).

As per this reliability metric, the value of Cronbach's Alpha is 0.789, which is higher than the minimum acceptable limit of 0.70. Therefore, the scale is highly reliable. All the values headed under the column "Cronbach's alpha if item deleted" were smaller than 0.789. Therefore, the reliability of the scale cannot be increased further by deleting any of the items. Hence, this scale cannot be further improved because the values of 'Cronbach's coefficient if items are deleted' are less than 0.789. The face validity method was used for checking the validity of the scale and it was found to be satisfactory to carry out further research. Hence, the first objective was achieved.

Table 2: Reliability Statistics		
Cronbach's Alpha		0.789
Number of Items		22
Number of Cases		375
		Cronbach's Alpha
	Items	**if Item Deleted**
V1	People who influence my behavior are using cryptocurrencies	0.785
V2	People who influence my behavior believe that I should invest in cryptocurrencies	0.788
V3	Investment in cryptocurrencies will raise my status symbol in society	0.782
V4	I plan to invest in cryptocurrency in the future	0.775
V5	I predict I would use this digital currency	0.774
V6	I intend to use cryptocurrency on a regular basis	0.774
V7	I will encourage others to use cryptocurrency as a mode of exchange	0.773
V8	I believe that Cryptocurrencies is trustworthy	0.781
V9	I do not doubt the honesty of Cryptocurrencies, their systems and related services	0.778
V10	I feel assured that legal and technological structure adequately protect me from problems with Cryptocurrencies	0.779
V11	Even if not monitored, I would trust Cryptocurrencies	0.779
V12	I trust that it protects my personal information	0.780
V13	I believe cryptocurrency is very helpful for me to timely fulfill my obligations	0.778
V14	Use of cryptocurrency is risky because it is not regulated	0.786
V15	It is riskier as compared to other financial investment options	0.784
V16	The transactions are safe and secured from hacker's attack	0.785
V17	I find cryptocurrency easy to use	0.774
V18	I believe my interaction with cryptocurrency on web portal is effortless and user friendly	0.774
V19	I often become confused when I think about the use of cryptocurrencies	0.772
V20	It takes time to learn how to invest in it	0.773
V21	I have the resources necessary to use cryptocurrency	0.780
V22	I have the required knowledge necessary to use cryptocurrency	0.788
Source: Authors' Compilation		

Factors Affecting Investors' Response for the Adoption of Cryptocurrency: As noted above we carried out EFA on the 18 variables, excluding behavioral intention constructs which consist of 4 items. We analyzed them using the Principal Component Method (PCM) with Kaiser Normalization and the Varimax Rotation (Orthogonal Rotation). EFA loaded best on four factors (shown in Table 3). The scope of rotation is to find an arrangement in which each variable loads high on a factor and low on others, for ease of interpretation. The Kaiser–Meyer–Olkin (KMO) statistic, a measure of sampling adequacy, for the appropriateness of applying factor analysis fell within the acceptable range (above 0.6), with a value of 0.850. It indicates the degree to which each variable in a set is predicted without error by the other variables. This further supported the continuance of factor analysis. Based on the above analysis, EFA loaded best on 4 factors and 18 statements, which in combination explained 69.067% of the variance. Table 3 shows the variables that are grouped under each of the four factors along with its eigenvalue and % of the variance.

Table 3: Factor Analysis Results

	Component 1	Component 2	Component 3	Component 4	Eigen Value	% of Variance
V8	0.847				4.280	23.775
V9	0.830					
V12	0.830					
V10	0.821					
V11	0.807					
V13	0.792					
V15		0.832			3.851	21.395
V16		0.830				
V3		0.827				
V14		0.818				
V1		0.791				
V2		0.785				
V20			0.842		2.780	15.445
V19			0.832			
V18			0.831			
V17			0.826			
V22				0.899	1.521	8.452
V21				0.866		
Extraction Method: Principal Component Analysis						
Source: Authors' Compilation						

'I believe that Cryptocurrencies is trustworthy' and 'I feel assured that technological structure adequately protects me from problems with Cryptocurrencies' have emerged as the most important factor having the highest loading value on the first factor (F1), which is loaded with 6 items, an Eigenvalue of 4.280 and variance explained of 23.775%. This factor relates to the investors' intention towards trust in cryptocurrency and its related technology. This might indicate that these currencies are backed by the latest technology which are having immense features that can provide a secure platform to investors and investors have strong trust in the technology. Therefore, a much more suitable option for investors.

'Use of cryptocurrency is risky because it is not regulated' and 'It is riskier as compared to other financial investment options' have emerged as the most important factors having the highest loading value on factor F2, which we labeled as 'Risk factors' with 6 items, an Eigenvalue of 3.851 and a variance explained of 21.395%. Investors are concerned about the regulation and volatility of this currency as it is banned in some countries and the legal status has not been given by the government yet.

The third factor (F3) relates to the 'Ease of Use. 'I believe my interaction with cryptocurrency on web portal is effortless and user friendly is emerged as an important variable. This factor emerged from 4 items with an Eigenvalue of 2.780 and a variance explained of 15.445%.

The fourth factor (F4) relates to the 'Supportive Technologies'. 'I have the resources necessary to use cryptocurrency' is found as the important variable in this factor. It emerges from 2 items with an Eigenvalue of 1.521 and a variance explained of 8.452%. Investors are concerned about the required knowledge and infrastructure to invest in and the supporting technologies use for mining cryptocurrency.

The results of the Cronbach alpha as shown in Table 4 are higher than 0.5 and therefore are acceptable. Hinton et al. (2004) note that a Cronbach alpha value between 0.5 to 0.7 shows moderate reliability. Therefore, it can be concluded that this scale is reliable and that we can group the Factors influencing Investors' adoption of cryptocurrency under 4 main characteristics.

Apart from identifying various influencing factors for the adoption of cryptocurrency, the current study identified some of the parameters for the awareness and usage of cryptocurrency in India.

Table 4: Cronbach Alpha

Characteristic Variable	Name of Characteristic Variable	Item	Cronbach Alpha
Characteristic Variable 1 (F1)	Trust	6	0.904
Characteristic Variable 2 (F2)	Risk Factors	6	0.898
Characteristic Variable 3 (F3)	Ease of Use	4	0.853
Characteristic Variable 4 (F4)	Supportive Technologies	2	0.722
Source: Authors' Compilation			

The prime concern of this research is to collect the data from those who are indulging in trading activities to fetch related information on this particular topic. In the questionnaire, they have been asked to respond only and only if they have invested in cryptocurrency else, they can skip the survey. With this, we received data of finally 375 respondents, and the rest entries are ignored for data analysis. The following information can be analyzed from the data –

- 67% of the respondents have heard about cryptocurrency from online advertisements, which means online media has a strong influence on people and they are curious to know and learn about this new term which has huge growth potential.
- 24% of the respondents have acquired cryptocurrency from mining,55% of the respondents bought it from an online platform and the rest received it as a payment for goods and services.
- It has been observed that the majority of the respondents have been using cryptocurrency for more than 3 years.

· According to the survey, Bitcoin, Ethereum, and Binance Coin are the most used digital currency by the respondents.

- 38% of the respondents have opted for WariX as a medium of exchange for cryptocurrency whereas 33% of respondents use Binance and the remaining use Coin Switch and Coin Base.
- 69% of the respondents have trust in Blockchain technology, which is used in Cryptocurrency in long term and most of the respondents belie ve that it will be the dominant currency in the coming years.
- 29% of the respondents believe that it should be regulated by the authority.
- Transaction cost is less and safe technology is found the main reason for its adoption.
- The majority of the respondents believe that 'Refer to others and earn cryptocurrency' and 'Completion of tasks/ games to earn cryptocurrency for free' are the best promotional strategies that influence them more to buy cryptocurrency.

Impact on identified constructs on Behavioral Intention: Regression analysis was used to test the proposed model.

Table 5: Model Summary for Regression Model

Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
	0.886	0.786	0.783	1.37738
Predictors: (Constant), ST, SCF, TR, ESU, RF				
Dependent Variable: BI				
Source: Authors' Compilations				

The detail of the Regression Analysis and outcomes of the regression model were discussed in this section. The value of R2 gave you an idea about the amount of variance in the criterion variable (Behavioral Intention) explained by the predictor variables namely Ease of Use (ESU), Trust (TR), Social Factors (SCF), Risk Factors (RF), and Supportive Technologies (ST). In the below table 5 labeled model summary, the R square value in the third column is 0.786. It

means 78.6% of the variance in the 'Behavioral Intention' was explained by the Five predictor variables. Hence, the model was accepted. Here BI stands for Behavioral Intention.

The following table 6 determined the statistical significance of the model. ANOVA test explains whether the overall model results are providing a significant-good result for the outcome variable or not.

Table 6: ANOVA for the Regression Model

	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Regression	2567.837	5	513.567	270.699	.000[b]
Residual	700.063	369	1.897		
Total	3267.899	374			
a. Dependent Variable: BI					
b. Predictors: (Constant), ST, SCF, TR, ESU, RF					
Source: Authors' Compilations					

The statistical significance of the model was tested using ANOVA with a significant value of 0.000 (should be less than 0.005) and it was found that the regression model is significantly a better predictor of Behavioral Intention. Here, F (5,369) = 270.699, <0.005, R2=78.6%. F-test is highly significant and we can assume that the model explains a significant amount of variance in Behavioral Intention.

5. Conclusion

Identification of new factors which influence investors' behavior towards the adoption of cryptocurrencies and the development of a new model are the two main novelties of this research. A new model has been developed, tested and a very high explanatory capacity has been accomplished as the major achievement. In this research work, the main objective of this empirical study was to find out various factors influencing the driving demand for cryptocurrency and then to study its impact on the behavioral intention of investors. With the literature support and empirical analysis, a model has been established. Concisely, we find that most investors believe that ease of use, trust, risk factors, and supportive technologies are the important factors that influence their decisions towards cryptocurrency. This might indicate that these currencies are backed by the latest technology which are having immense features that can provide a secure platform to investors and investors have strong trust in the technology. Therefore, a much more suitable option for investors. Investors are concerned about the regulation and volatility of this currency as it is banned in some countries and the legal status has not been given by the government yet. Moreover, some investors fear that too much money spent on it will affect their future income as it is not regulated and has no legal status. It has also been studied that the variables under study namely Ease of Use, Trust, Social Factors, Risk factors, and Supportive Technologies have the greatest influence on the Behavioral Intention of the investors. In this model, Ease of Use, Trust, Social Factors, Risk factors, and Supportive Technologies were treated as independent variables whereas 'Behavioral Intention' was taken as the dependent variable. R square value is 0.786. It means 78.6% of the variance in the Behavioral Intention was explained by the five predictor variables. The statistical significance of the model was tested using ANOVA with a significant value of 0.000 (should be less than 0.005) and it was found that the regression model is significantly a better predictor of Behavioral Intention. Here, F (5,369) = 270.699, <0.005, R2=78.6%. F-test is highly significant and we can assume that the model explains a significant amount of variance in Behavioral Intention. As the present study is concerned with the factors which influence investors' behavior towards the adoption of cryptocurrencies, its findings may be important for policymakers, practitioners, researchers, who can better work on their service offerings. Thus, the companies, who are indulging in this business need to focus on providing effective services to their customers. We, therefore, recommend that companies that are dealing in cryptocurrencies place special emphasis on these variables to provide better assistance to their customers.

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