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Analysis of Challenges for Blockchain Adoption in Enterprise Distributed Applications

Zeeshan Ali Siddiqui[1], Mohd. Haroon[2]
[1]Department of Computer Science and Engineering,
Integral University,
Lucknow-226026, Uttar Pradesh, India.
[2]Department of Computer Science and Engineering,
Integral University,
Lucknow-226026, Uttar Pradesh, India.

Abstract— Decentralization, auditability, smart execution, and security are four ways that blockchain technology (BCT) differs from current cutting-edge technologies based on client-server architecture. Without the need of any middlemen, blockchain technology builds trust between untrustworthy parties. By employing its distinctive properties, blockchain technology is presently used to address the problems of enterprise distributed applications (EDAs) to some extent. As a result, businesses involved in a wide range of industries have shown interest in it. Despite being praised as tool for businesses to create secure applications, BCT is still not widely used. The objective of the current study is to use an extension of the technology acceptance model (TAM2), constituted by 15 hypotheses (H1–H15), to address the factors that influence professionals' desire to adopt the BCT in the EDAs. In order to achieve the research objective, the study consists of a quantitative non-experimental correlational method with the goal of creating an empirical model to evaluate the relationship between perceived usefulness, perceived ease of use, scalability, effort, performance, adaptability, maintainability, experience, and blockchain adoption in India with a focus on EDAs. Descriptive analysis, discriminant analysis, multiple linear regression, ANOVA, homoscedasticity, multicollinearity, reliability, linearity, survey question's normality, and independent errors are conducted to analyze survey data from a sample of 396 IT professionals from various firms in India. The findings show that IT professionals' desire to employ the BCT in EDAs are positively impacted by all the hypothesis except H3 and H8 that has no impact on IT professionals' desire to employ BCT.

Keywords- Blockchain; factor; barriers; technology acceptance model; TAM; SPSS;

I. INTRODUCTION

Applications enabled by blockchain technology (BCT) raise system confidence because they do away with intermediaries. Blockchain is a sort of distributed ledger that is transparent, decentralized, peer-to-peer, and unchangeable that keeps data only in appends. BCT is created for transactional databases with the consent of two impartial, equal parties [1]. BCT enables the procedures to be streamlined, enhanced, more transparent, and secured since "transactions are historically recorded in a distributed digital ledger that is immutable and nearly real-time" [2]. Once the data has been registered on the blockchain, it is cryptographically protected using mathematical methods like ethash, SHA256, and equihash [3]. BCT varies from conventional methods in four ways: decentralization, security, auditability, and smart execution [4]. Peer-to-peer transactions are carried out through blockchain, which eliminates the need for third parties and making it more efficient, secure, verifiable, and affordable than traditional client-server-based centralized technology. The applications based on BCT span a number of industries, including social media [5], healthcare [6], e-commerce [7], financial technology [8], and supply chain [9 and 10]. Enterprise distributed applications (EDAs) have undergone substantial alterations as a result of technology advancements. Modern, cutting-edge technology may enable companies to outperform their competitors. BCT is one such state-of-the-art tool that offers EDAs a competitive edge and encourages efficient operation. Although blockchain has several advantages over conventional EDA techniques, BCT utilization is currently quite low [11]. The focus of the current study was on identifying the elements that may influence professionals' attention while using BCT in modern EDAs. Understanding the factors influencing BCT adoption in India would be essential, and the findings of this study might provide fresh insights into this topic. The BCT acceptance models have been the subject of several studies across many sectors, although the majority of the study papers published to date have concentrated on BCT security concerns. The goal of this quantitative study is to utilize technology acceptance model (TAM2) to understand how perceptions of usefulness, scalability, effort, ease of use, performance, adaptability, maintainability, and experience aspects affect the adoption of BCT.

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II. LITERATURE REVIEW

Many frameworks have been developed that use a range of factors in order to explain how consumers accept models. The most common models are covered in the next sections. For study in the psychology and social sciences, [12] developed the first theory of reasoned action (TRA). This strategy specifically makes use of three crucial components: a favorable attitude, social standards, and the desire to engage in an activity. The theory of planned behavior (TPB) was suggested by [13]. Realistic restrictions, a self-efficacy-type component, and people's behaviors over which they have no volitional control can all be taken into consideration and included in TPB. [14] made the initial suggestion for the technology acceptance model (TAM). TAM has been widely used to understand behavior related to the use of information technology [15].

Additional models and theories of individual acceptance include the unified theory of acceptance and use of technology [16], the technology-organization-environment [17], the theory of task technology fit [18], the theory of diffusion of innovations [19], and the theory of planned behavior [20].

III. MATERIALS AND METHODS

Following were the steps used to conduct this investigation: Step 1: Pick theoretical frameworks, methods, and statistical tools that are appropriate for this research. Step 2: Developing the research questions. Step 3: Create hypotheses to address the problems. Step 4: Create a survey questionnaire that will be used for the survey. Step 5: Carry out the survey and compile the findings. Step 6: Presentation of findings from the present work, including implications, shortcomings, and recommendations for future study.

A. The Proposed Research Model

This study's framework is based on non-experimental quantitative research. An extension of TAM2 has been used in this investigation to determine whether there are particular variables that affect the adoption of BCT by IT professionals in India. The recommended fit model is comprised of the dependent variable, the independent variables, and the mediating variable. There are seven concurrent mediating factors I were put to use in a regression test for mediation analysis, and one independent variable, F, was examined to determine how it caused changes in the mediating variables. Figure 1 illustrates a regression model for mediation. Figure 2 presents the conceptual research model, it also provides a list of the hypotheses H1–H15. I has an impact on the dependent variable, D. A mathematical mediation conceptual framework is shown in the following three equations. The model is developed on the basis of the TMA foundation presented by [14].

(a) $D=z1 + x*F + r1$ (1)

(b) $D=z2 + x'*F + b*I + r2$ (2)

(c) $I = z3 + a*F + r3$ (3)

Where, I1=PUS, I2=PEU, I3=SC, I4=PE, I5=MA, I6=EF, I7=AD, F=EX, D = BC adoption, and r are the residuals.

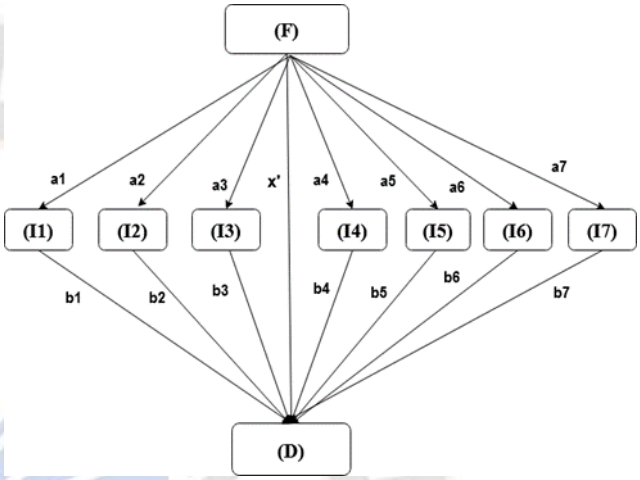

Figure 1. Regression model for mediation.

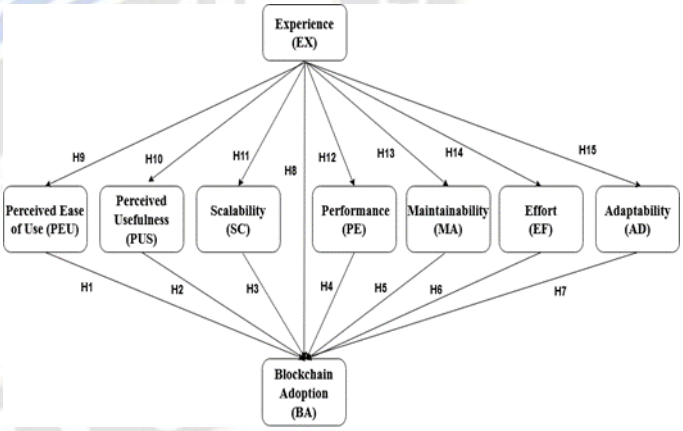

Figure 2. Theoretical Research Model.

B. Hypotheses Design

The eight independent variables that will be used are perceived ease of use (PEU), perceived usefulness (PUS), scalability (PSC), performance (PE), maintainability (MA), effort (EF), adaptability (AD), and experience (EX) [21]. Additionally, the sole dependent variable in this study's methodology for conducting research is the desire of adopting blockchain technology (BA). According to [14], PEU is the amount of physical or mental work performed by users of a certain technology. PUS stands for the subjective opinions of the users of a system or piece of technology that

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may help them or make it harder for them to do their jobs [14].

A system's ability to handle growing data volumes is known as scalability. The speed at which a blockchain can handle transactions will influence how quickly it expands. The need that all users of the blockchain consent on the authenticity of a transaction is what hinders scalability the most [22]. PE is a gauge of a system's potential at the moment. The average amount of time it takes for a transaction to be verified and kept in each peer node such that it cannot be reversed or cancelled is a common metric for measuring the performance of blockchain networks [22]. The ability of the blockchain platform to be tested, reused, modified, and analyzed is what [23] define as MA. All facets of creating, advancing, and maintaining blockchain systems and applications are part of the blockchain development effort (EF). According to [24], one of the key non-functional needs for traceability systems is AD. The experience construct, according to [14], can also influence people's attitudes towards using PUS constructs. The following research hypotheses serve as the basis for this study: **H1:** Perceived ease of use has a favorable influence on the desire to practice BCT in EDAs. **H2:** Perceived usefulness has a favorable influence on the desire to practice BCT in EDAs. **H3:** Scalability has a favorable influence on the desire to practice BCT in EDAs. **H4:** Performance has a favorable influence on the desire to practice BCT in EDAs. **H5:** Maintainability has a favorable influence on the desire to practice BCT in EDAs. **H6:** Effort has a favorable influence on the desire to practice BCT in EDAs. **H7:** Adaptability has a favorable influence on the desire to practice BCT in EDAs. **H8:** Experience has a favorable influence on the desire to practice BCT in EDAs. **H9:** Perceived ease of use mediates the relationship between experience and BCT adoption. **H10:** Perceived usefulness mediates the relationship between experience and BCT adoption. **H11:** Perceived scalability mediates the relationship between experience and BCT adoption. **H12:** Perceived performance mediates the relationship between experience and BCT adoption. **H13:** Perceived maintainability mediates the relationship between experience and BCT adoption. **H14:** Perceived effort mediates the relationship between experience and BCT adoption among. **H15:** Perceived adaptability mediates the relationship between experience and BCT adoption.

IV. EMPIRICAL ILLUSTRATION

Despite the various benefits it offers, BCT is not frequently utilized in India. The enormous benefits of BCT are therefore not being reaped by Indian firms. The usage of BCT by Indian IT workers is not yet the subject of any study findings. Consequently, understanding the factors affecting BCT acceptance by Indian IT professionals may aid business stakeholders in putting BCT into practice more swiftly. This chapter will discuss the results from the BCT adoption research under the sections of descriptive analysis, sample data description, hypothesis analysis, and regression analysis.

C. Data Collection and Preparation

The G*Power model was used in this work along with F Tests, multiple linear regression, a fixed model, and R2 departure from zero. The G* Power tool was configured with an a priori power analysis, alpha error probability of 0.05, effect size f2 of 0.15, power of 0.95, and eight predictors. The study's approximate sample size was determined to be 160 IT professionals. The power, alpha, and effect size in the study support the proposal made by [25] to choose the sample size using power analysis.

The researcher picked a sample size of 900 participants, which was greater than what was anticipated because small sample sizes in quantitative research might potentially compromise generality and validity. Online questionnaires were made available to 900 IT professionals in India, and 431 of them replied or had their responses recorded. 37 polls haven't received responses. For data analysis, a total of 396 valid samples were acquired, with a response rate of 44%, as shown in Table 1. Data for the study were gathered using an online survey platform called SurveyMonkey. The survey in this study was administered using a structured questionnaire that used a Likert-style scale to collect data. A typical Likert scale: Level 5 indicates strong agreement, Level 4 indicates agreement, Level 3 indicates neutral agreement or disagreement, and Level 2 indicates disapproval. Strongly Disagree, Level 1.

TABLE 1. EXPERIENCE AND BUSINESS DOMAIN

Experience and Business(n = 396)	**Occurrence**	**%**
Experience (in Years)		
<1	12	3.03
1-2	27	6.82
2–5	159	40.15
5–10	175	44.19
>10	23	5.81
Business		
Healthcare	108	27.27
Financial technology	126	31.82
E-commerce	55	13.89
Supply chain	58	14.65
Social media	49	12.37

D. Descriptive Analysis

SPSS software was employed to get the descriptive statistics. These statistics are used to present each variable's mean and standard deviation from the data set. The Pearson's correlation coefficient values, one-tailed significance levels,

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and the number of occurrences each correlation was predicated on for each pair of variables could all be seen in the correlation matrix that the descriptive statistics created [26]. Table 2 displays the results of the multiple regression analysis used to examine the mean, standard deviation, and variance in this study.

TABLE 2. DESCRIPTIVE STATISTICS FOR INDEPENDENT AND DEPENDENT VARIABLES

Descriptive Statistics						
	N	**Min**	**Max**	**Mean**	**Std. Deviation**	**Variance**
BA	396	3	15	7.4697	4.17674	5.867
PEU	396	4	20	9.9899	5.6465	7.986
PUS	396	4	20	10.9571	5.61087	7.871
SC	396	4	20	9.5328	5.11815	6.611
PE	396	3	15	7.8081	4.16382	5.785
MA	396	4	20	10.5051	5.3175	7.085
EF	396	3	15	8.351	4.01382	5.387
AD	396	3	15	6.6919	3.28519	3.663
EX	396	4	20	12.6338	5.69824	8.146
Valid N (listwise)	396					

E. Homoscedasticity Test

In a null hypothesis significance test, it was anticipated that the variance of the dependent variable would remain constant for all independent variable values. As a result, it is assumed that homoscedasticity will ensure that the estimated parameters that define the model and the significance tests are accurate [26]. A scatterplot of homoscedasticity was evaluated by comparing the value of the regression standardized residuals to the outcome predicted by the model. The scatterplot in Figure 3 shows that not all dependent variable values have the same variance around the regression line. It is clear from this that the homoscedasticity assumption has been falsified. Weighted least squares regression was used to unbiasedly estimate the statistical models [26].

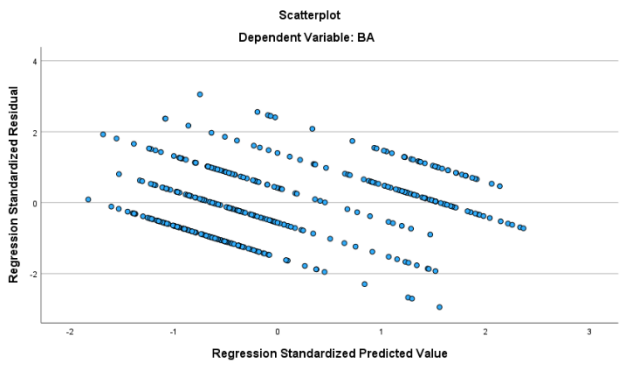

Figure 3. Standardised residuals

F. Linearity Test

The dependent and independent variables had a linear relationship, in accordance with the linearity assumption. A scatterplot matrix, Figure 4, was made to identify if each independent variable and each dependent variable had a linear relationship between them.

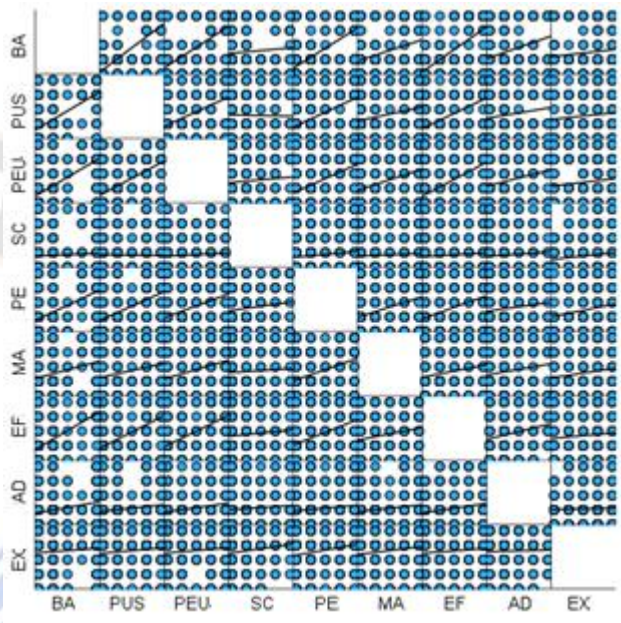

Figure 4. Scatter matrix.

G. Independent Errors Test

For any two observations, the residual terms need to be independent. The significance tests and confidence intervals would likely be inaccurate if the independence premise were not taken into consideration [26]. Test statistics may have values between 0 and 4. A number larger than three typically raises concerns. The Durbin-Watson approach was used to determine if there was a serial correlation of errors. As shown in Table 3, the Durbin-Watson score of 1.589, the independent error assumption was met.

TABLE 3. INDEPENDENT ERRORS TEST

R	R Square	R Square (Adjusted)	Std. Error	Durbin-Watson
.840[a]	0.705	0.682	0.88677	1.589

H. Normality Test

For determining normality, the P-P plot was a useful graph. It plots the correspondence between the cumulative probability of a variable and the cumulative probability of a certain distribution [26]. The data points tended to group together linearly even though there was significant diversity, as seen in Figure 5.

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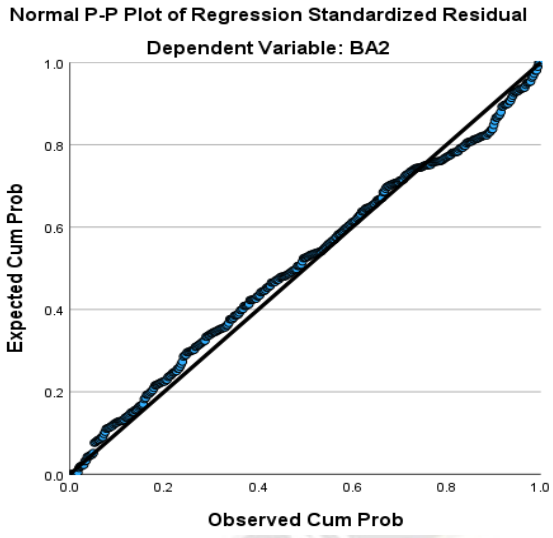

Figure 5. Normality plot.

There was a linear correlation between the independent and dependent variables. According to an inspection of the histogram in Figure 6, the dependent variable and the eight independent variables exhibit a normal distribution.

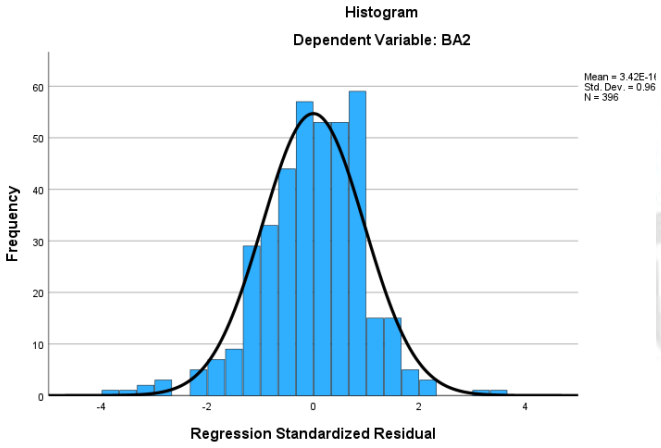

Figure 6. Residual normalcy histogram.

I. Multicollinearity Test

The presence of multicollinearity, which might have an adverse effect on the outcomes of the regression analysis, was tested using multiple correlations and correlations of the proper magnitude. According to [26], the Variance Inflation Factor (VIF) indicated if one predictor had a significant linear relationship with another predictor or set of predictors. If the greatest VIF was greater than 10, then there was cause for concern, per the regulations. The tolerance statistics were likewise greater than 0.2 after applying the rules to the model, and the VIF values were much lower than 10. As a consequence, collinearity was not present in the data. The average VIF was 1.325 when the VIF scores of each predictor were divided by the total number of predictors, Table 4. This led to the conclusion that collinearity is not a problem for this model.

TABLE 4. MULTIPLE REGRESSION

	Coefficients (Unstandardized)		Coefficients (Standardized)			Collinearity Data	
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
PUS	.365	0.043	.323	8.572	.000	.620	1.612
PEF	.311	0.040	.284	7.705	.000	.646	1.548
EU	.221	0.040	.211	5.576	.000	.616	1.624
PE	.213	0.042	.184	5.122	.000	.680	1.471
MA	.042	0.036	.038	1.184	.237	.843	1.187
EX	-.031	0.037	-.026	-0.837	.403	.947	1.056
SC	.010	0.042	.007	0.240	.810	.959	1.042
AD	.120	0.043	.085	2.787	.006	.944	1.060

a. Dependent Variable: BA

J. Reliability

According to the information in Table 5, the assessment of the sample survey with 396 respondents yielded a Cronbach alpha (CA) value of 0.889. According to [26], a CA reliability score of 0.7 was deemed to be a sufficient consistency statistic.

TABLE 5. CRONBACH'S ALPHA RELIABILITY TEST

CA value	CA value (Standardized Items)	Items Count
.889	.886	9

K. Pearson's Correlation

Using Pearson's Correlation (r), it was determined whether there was a correlation between the survey questions and the pertinent variable(s), see Table 6. According to [25], a minor correlation is a value more than 0.1 but less than 0.3, a moderate correlation is a value greater than 0.3 but less than 0.5, and a high correlation is a value greater than 0.5.

TABLE 6. PEARSON'S CORRELATION

	BA	PUS	EF	PEU	PE	MA	EX	SC	AD
BA	1								
PUS	.668**	1							
EF	.642**	.490**	1						
PEU	.616**	.494**	.509**	1					
PE	.544**	.458**	.378**	.407**	1				
MA	.299**	.218**	.193**	.309**	.333**	1			
EX	.092	.095	.081	.100*	.188**	.138**	1		
SC	.064	-.018	.079	.068	.115*	.053	.128*	1	
AD	.248**	.134**	.190**	.188**	.114*	.138**	.022	.068	1

**. 0.01 level (2-tailed). *. 0.05 level (2-tailed).

L. Multiple Regression Analysis

In order to evaluate the assumptions and determine the amount of variation in the dependent variable brought on by the independent factors, data were subjected to multiple

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regression analysis. The fact that the data were found to be consistently distributed suggests that they closely fitted the model. In this instance, a result of 0.812 indicates an adequate level of prediction, Table 7. Readers can see that 66% of the variance in the dependent variable, BCT adoption, is explained by independent factors by looking at the estimated R square value of.659 in the table. Variables other than the parameters that the model took into account were responsible for 34% of the variance.

TABLE 7. REGRESSION MODEL SUMMARY

				Change Statistics				
R	R Square	R Square (Adjusted)	Std. Error	R Square Change	F Change	df1	df2	Sig. F Change
.812[a]	0.659	0.652	0.92753	0.659	93.574	8	387	<0.001
a. Predictors: (Constant), AD, EX, SC, PUS, MA, EF, PE, PEU								
b. Dependent Variable: BA								

The coefficients Table 8, which also determines whether the population's unstandardized or standardized coefficients are equal to 0, displays the statistical significance of each independent variable. If $p < 0.05$, the coefficients are statistically different from zero. Since the model already accounts for the other explanatory factors, the goal of these tests of significance is to establish the need of each explanatory factor.

TABLE 8. COEFFICIENTS REGRESSION TEST

	Coefficients (Unstandardized)		Coefficients (Standardized)			Confidence Interval for B (95.0%)	
	B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
PUS	.365	.043	.323	8.572	<.001	0.281	.449
PEF	.311	.040	.284	7.705	<.001	0.232	.391
EU	.221	.040	.211	5.576	<.001	0.143	.299
PE	.213	.042	.184	5.122	<.001	0.131	.294
MA	.042	.036	.038	1.184	.237	-0.028	.113
EX	-.031	.037	-.026	-0.837	.403	-0.105	.042
SC	.010	.042	.007	0.240	.810	-0.073	.094
AD	.120	.043	.085	2.787	.006	0.035	.205
a. Dependent Variable: BA							

Using the F-ratio in the ANOVA Table 9, it is determined whether the overall regression model can fit the data.

TABLE 9. ANOVA REGRESSION TEST

	Sum of Squares	df	Mean Square	F	Sig.
Regression	644.019	8	80.502	93.574	<.001[b]
Residual	332.940	387	.860		
Total	976.960	395			
a. Dependent Variable: BA					
b. Predictors: (Constant), AD, EX, SC, PUS, MA, EF, PE, PEU					

The seven parallel mediation factors and their interactions with the experience variable are shown in Table 10. The basic mediation paradigm is the easiest to understand.

TABLE 10. P INDEPENDENT VARIABLE AND MV MEDIATION VARIABLE

	Coefficients (Unstandardized)		Coefficients (Standardized)		
	B	Std. Error	Beta	t	Sig.
PUS	.013	.058	.014	.227	.019
EF	-.004	.055	-.005	-.079	.937
PEU	.007	.054	.008	.131	.009
PE	.133	.056	.142	2.382	.018
MA	.074	.048	.082	1.531	.027
SC	.124	.057	.108	2.164	.031
AD	-.018	.058	-.016	-.307	.759
a. Dependent Variable: EX					

V. RESULTS AND DISCUSSION

The linear regression analysis was performed on each hypothesis to determine whether to accept or reject the null hypothesis. H1-H2, H4-H7, according to Table 11, have the positive effect on professionals' desire to implement BCT. All of the suggested hypotheses are therefore accepted except H3 and H8. The results of H1, H2 agree with those of [27], [28], and [29]. The findings of the studies done by [30] and [31] are validated by the results of H4. The findings from H5 concur with those from [23] and [32]. The findings of H6 are consistent with the study done by [33]. The research of [24] and the findings of H7 are in agreement. The findings of H3 and H8 are not consistent with the studies by [14] and [34].

TABLE 11. TESTING OF HYPOTHESES

Hypotheses	B	Std. Err	Beta	t	p value	Result
H1	.645	.042	.616	15.521	<.001	Accept
H2	.755	.042	.668	17.825	<.001	Accept
H3	.090	.070	.064	1.274	.203	Reject
H4	.628	.049	.544	12.862	<.001	Accept
H5	.330	.053	.299	6.210	<.001	Accept
H6	.702	.042	.642	16.616	<.001	Accept
H7	.350	.069	.248	5.087	<.001	Accept
H8	.113	.062	.092	1.833	.068	Reject

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The path (I = z3 + a*F + r3) from experience to perceived usefulness was statistically significant and positive (b=.014, p =.019). The path (D=z2 + x'*F + b*I + r2) from perceived usefulness to blockchain adoption was significant and positive (b=.668, p=.001), indicating that IT professionals scoring higher on perceived usefulness are more likely to adopt blockchain (H9).

The path (I = z3 + a*F + r3) from experience to perceived ease of use was statistically significant and positive (b=.008, p =.009). The path (D=z2 + x'*F + b*I + r2) from perceived ease of use to blockchain adoption was significant and positive (b=.616, p=.001), indicating that IT professionals scoring higher on perceived ease of use are more likely to adopt blockchain (H10).

The path (I = z3 + a*F + r3) from experience to scalability was statistically significant and positive (b=.108, p =.031). The path (D=z2 + x'*F + b*I + r2) from scalability to blockchain adoption was not significant but positive (b=.064, p=.203), indicating that IT professionals scoring higher on scalability are more likely to adopt blockchain (H11).

The path (I = z3 + a*F + r3) from experience to performance was statistically significant and positive (b=.142, p =.018). The path (D=z2 + x'*F + b*I + r2) from performance to blockchain adoption was significant and positive (b=.544, p=.001), indicating that IT professionals scoring higher on performance are more likely to adopt blockchain (H12).

The path (I = z3 + a*F + r3) from experience to maintainability was statistically significant and positive (b=.082, p =.027). The path (D=z2 + x'*F + b*I + r2) from maintainability to blockchain adoption was significant and positive (b=.299, p=.001), indicating that IT professionals scoring higher on maintainability are more likely to adopt blockchain (H13).

The path (I = z3 + a*F + r3) from experience to effort was not statistically significant and negative (b= -.005, p =.937). The path (D=z2 + x'*F + b*I + r2) from effort to blockchain adoption was significant and positive (b=.642, p=.001), indicating that IT professionals scoring lower on effort are less likely to adopt blockchain (H14).

The path (I = z3 + a*F + r3) from experience to adaptability was not statistically significant and negative (b= -.016, p =.759). The path (D=z2 + x'*F + b*I + r2) from adaptability to blockchain adoption was significant and positive (b=.248, p=.001), indicating that IT professionals scoring lower on effort are less likely to adopt blockchain (H15).

The direct relationship between experience and blockchain was favorable and not statistically significant (b=.092, p=.068), suggesting that IT professionals with less experience are less likely to embrace blockchain. IT workers with more experience are more likely to embrace blockchain, according to the positive and significant route (D=z1 + x*F + r1) from experience to adoption (b=.092, p=.000). It was found that there was only a limited mediation for hypothesis H9-H15 when the mediation effect was tested.

VI. IMPLICATIONS AND FUTURE RESEARCH DIRECTIONS

The adoption of BCT in India has not before been the topic of a specific study that focused on a quantitative research technique using the TAM2 model, according to an analysis of preceding BCT research approaches. It was feasible to understand BCT adoption in India by being aware of the factors affecting the adoption. The experimentally based BCT study that was carried out in India followed this trend. To ascertain if research activities significantly influenced the disclosure of the impact of BCT adoption, an adoption study using a quantitative method and the TAM2 model was required. BCT adoption in India and its relationship to elements that were excluded from the prior experimental studies were still subjects of discussion. The suggested research methodology in this study might assist managers in making decisions by assisting them in identifying advantageous and disadvantageous sector-specific factors/constructs that might affect the adoption of BCT. It would be advantageous for managers and developers to be able to foresee the risks and challenges associated with the implementation of BCT.

In India, this poll was conducted with a focus on IT professionals. It may be able to pinpoint the global factors influencing BCT adoption by expanding the study's geographic scope to include other countries. Future research should analyze the impact of the same factors while limiting the sample to a certain industry or segmenting the data by industry. As this study only discovered one mediation component that could influence the adoption of BCT, further research may examine what the actual variables are.

VII. CONCLUSION

In this study, the factors that led Indian IT employees to adopt BCT were investigated. This study contributed to the body of knowledge by identifying the factors that influence the adoption of BCT and filled a knowledge gap. The quantitative non-experimental correlational analysis employed in this study was built on the eight factors identified in the TAM2 Framework. The study found a strong relationship between perceived utility, scalability,

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effort, simplicity of use, performance, flexibility, maintainability, and experience and the uptake of BCT among Indian IT professionals. But neither the mediator factors of expertise nor scalability made a big difference in how widely BCT was used by Indian IT professionals. The study's findings indicated that India's shift to a digital industrial economy was still in its early stages. However, as governments and organizations develop their policies, this study will provide some recommendations for the adoption of BCT as an essential part of an all-encompassing distributed ledger strategy.

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