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Impact of Innovation on Adoption of Block Chain Technology with the Moderating Role of Digital Marketing

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Abstract

Purpose: This research aims to examine the impact of innovation on blockchain technology adoption within the context of digital marketing.

Methodology: A combined qualitative and quantitative approach is employed, with a focus on case studies that use blockchain technology as a lens to assess the influence of innovation on digital marketing.

Findings: Our linear regression analysis reveals that while digital marketing contributes to innovation and blockchain adoption, the observed impact is not statistically significant.

Unique Contribution to Theory, Practice, and Policy: Given the increasing significance of data security and compliance with regulations like the General Data Protection Regulation (GDPR), it is imperative for digital marketing agencies to prioritize these aspects. By emphasizing these elements, businesses can harness the full potential of blockchain in their advertising strategies.

Keywords: *Digital Marketing, Innovation, Block chain,*

Introduction

New views changed corporate marketing and economics. Thompson (2000) recommended business economics notwithstanding differences between marketers and analysts. Although marketers are expected to prosper and help society (Hunt, 2010), marketing is thrilling and difficult.

Internet marketing makes most companies start online (Kamal, 2016). Digital marketing brands new businesses and analyses consumer behaviour (Mingione, 2020). Banking, supply chain, and real estate security, documentation, and production have improved with blockchain.

Blockchain's immutability and all-node auditing reduce costs and improve fault tolerance (Thakore et al., 2019). This technology may change finance, commerce, and administration from 2008 Bitcoin to digital marketing (Usunokun et al., 2022).

As digitization advances, marketers must utilise online and offline methods (Oklander, 2018). Brands, consumers, and income gain from simple digital marketing (Bondarenko, 2021; Pradani, 2017). Entrepreneurs use digital marketing to build brand loyalty, attract customers, and engage suppliers (Krishnaprabha & Tarunika, 2020; Mazzarol, 2015

Digital marketers use big data to target online audiences and boost customer loyalty (Peacock, 2014; Wedel & Kannan, 2016). Data, the "oil of the digital economy," speeds decision-making and promotes ICT culture, enabling cutting-edge digital marketing.

"Digital marketing" comprises email, websites, apps, search engines, and social media (Singleton et al., 2016). Businesses spend more on digital marketing (Maddox, 2015). Outstanding content marketing attracts, acquires, and keeps clients (Cohen, 2011). This includes goals, target analysis, advertising strategy, and assessment (Ionascu, 2015). Web and data analytics improve advertising and financial performance, growing firms (Basney, 2014). Lean firms highlight digital marketing's cost-effectiveness and strategy testing (J. Lee, 2016). Growth hacking, which shares data online, may help firms (Kanttila2004).

Customer acquisition rises with internet marketing. Internet presence is crucial to company. Top buyer-seller tech should be encouraged. Upgrades to IT may improve digital marketing data efficiency. 2004 (Gruber) Scientifically evaluate new tech's pros and cons. Digital marketing is tricky. Current advertising may cost. Advertising network ethical issues (Ergeer & Sigfridsson, 2018). "Did the firm use customer data to boost sales" ? Many think Facebook and Google sell and buy data (Gibson, 2018).

Companies control and influence digital marketing and advertising (Grewal, Roggeveen, Sisodia, & Nordfält, 2017). Digital marketing innovation trend data shortages slowed blockchain adoption (de Zubielqui & Jones, 2020). Previous study failed to apply digital marketing trends' trust, brand recognition, and consumer engagement advantages to companies. This query is achievable without research.

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Literature Review

2.1 Block-chain (Dependent variable)

Shrestha, Halgamuge, and Treiblmaier's (2020) research highlights how blockchain technology is reshaping the marketing industry. By eliminating intermediaries, blockchain enhances brand positioning, image, awareness, and return on investment for online businesses (Boukis, 2019). It also secures e-commerce transactions, curbs corporate dominance, streamlines fraud detection, and reduces transaction costs (Bulsara & Vaghela, 2020). Furthermore, it fosters trust by enabling transparent data collection and utilization (Shorman, Allaymounq, & Hamid, 2019), exemplified by platforms like Open Bazaar for peer-to-peer transactions (Arps & Christin, 2020). The technology's adaptability and potential applications across various industries are evident despite challenges related to decentralization and network access control (Buterin, 2015; T. Swanson, 2015). Coita, Abrudan, and Matei (2019) suggest that blockchain has the potential to enhance marketing through consumer micropayments, fraud detection, and loyalty programs. Additionally, Jain (2021) highlights the effectiveness of secure smart contract marketing, where customers trade data for attractive discounts.

2.2 Innovation Technology

Clayton Christensen (1997) highlights how innovation disrupts markets, produces new technologies, and enhances global competitiveness. Jones-Evans (1996) predicts internet businesses will replace offline ones. Streamlining processes and improving internal and external communication benefits adopters and non-adopters. Marketing and development increase competitiveness (Drucker, 1966; Wu & Balasubramanian, 2003), whereas Schumpeter (1934) and Kusiak (2007) say innovation boosts global economic growth. Galanakis (2006) says innovation impacts more than science and technology. Marketing helps embrace new technologies and features (Kameoka, Ito, & Kobayashi, 2001) and apply concepts (D'Attoma & Ieva, 2020). Aesthetics, excitement, purpose, and design-centric technology foster invention, writes Abrahamson (2011) Murray, Gao, and Kotabe (2011) suggest marketing innovation in 491

Chinese enterprises may affect exports, whereas Damanpour (1988) highlights administrative innovation's organisational resource demands. Open innovation, IP licencing, and external alliances boost corporate innovation, claim Kobarg, Stumpf-Wollersheim, and Welpe (2019). Hameed, Nisar, and Wu (2021) think QR codes, social media, and digital marketing may increase global market share.

2.3 Digital Marketing (Moderating Variable)

Online advertising and e-promotion are sometimes conflated with digital marketing, despite the latter involving various methods for firms to reach customers. Digital marketing's identity exposes corporations to numerous internet users, utilizing technology to tailor material and understand customer preferences. Social media plays a pivotal role, allowing businesses to engage with customers, enhance brand value, and increase sales (Lodhi & Shoaib, 2017). The current business landscape necessitates rapid technology adoption for effective competition (Meria, Aini, Santoso, Raharja, & Millah, 2021), emphasizing the importance of digital skills for successful marketing (Silva, Hassani, Madsen, & Gee, 2019). Social media particularly benefits micro, small, and medium enterprises (Santos et al., 2022), a trend amplified by the COVID-19 pandemic, where digital platforms became essential for survival and customer engagement (Rofiq, Nawawi, Syafitri, Ektiarnanti, & Maenadi, 2020). Post-pandemic, digital skills are critical for retaining customers and maintaining business viability (Meisaroh, Sudarmiatin, & Hermawan, 2022). Despite its benefits, digital marketing can pose challenges for small businesses, necessitating training and resource allocation for optimal outcomes (Olazo).

2.4 Relationship between Innovation and Blockchain

Complex and dynamic blockchain may disrupt practises. This big transition requires new corporate strategies (Betz, 2003; Freeman & Perez, 1988). Established firms may struggle with major changes (Danneels, 2004).

Integrating external and internal data in blockchain implementation involves discovery (Hill & Rothaermel, 2003). Beyond peer review and safe transactions, blockchain's decentralised and secure data storage and access may improve data quality and transparency. However, transaction verification, data scalability, and privacy constraints have hindered blockchain adoption (Boersma & Bulters, 2016).

To utilise blockchain in business, organisations must match their aims with the kind (public or private) (Cuomo, 2016). According to Nguyen et al. (2020), blockchain solutions and privacy issues intersect with 6G and other emerging technologies.

Businesses and governments worldwide are interested in blockchain (Adiyanto & Febrianto, 2020). Blockchain decentralisation and cryptocurrencies promote tourism (Mohammed et al., 2020). Companies may not use blockchain (Rahardja, Aini, & Maulana, 2021).

H1: Innovation has a positive impact on blockchain.

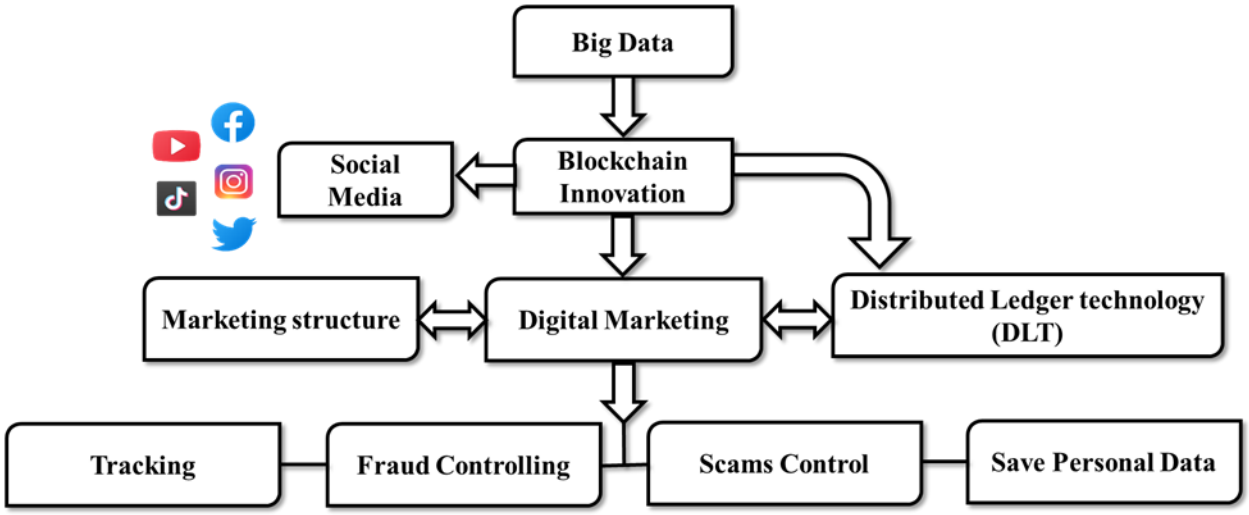
2.5 Relationship between digital marketing, innovation and blockchain

Blockchain technology is revolutionising digital advertising and product creation. Its marketing potential remains untapped despite its numerous benefits. Trivedi (2013) highlights how digital marketing benefits enterprises across the purchasing cycle, whereas Trainor (2011) emphasises how it improves consumer communication and information availability.

Blockchain technology, traditionally associated with cryptocurrency, may revolutionise internet advertising. It can execute contracts directly, eliminating intermediaries, and provides unmatched security and reliability for a broad variety of financial operations. Blockchain has numerous applications, but its marketing support potential is untapped. Blockchain technology may disrupt advertising as the internet and digital entertainment did in the 1980s (Casino, 2018).

Hubs secure blockchain data and digital ad exchanges, boosting trust and utility in huge data utilising blockchain technology (Yan Chen & Bellavitis, 2020). Blockchain's ability to eliminate middlemen streamlines markets and encourages disintermediation (Zheng et al., 2018). Since organisations may now collect customer data when needed, digital marketing techniques are changing (Brauer & Linnala Eriksson, 2020).

Blockchain technology secures and transparentizes digital marketing. Smart contracts provide supplier and retailer supervision, fraud protection, and customer loyalty (Konstantinidis et al., 2018). It simplifies information discovery and trust for organisations and consumers (Min, 2019).



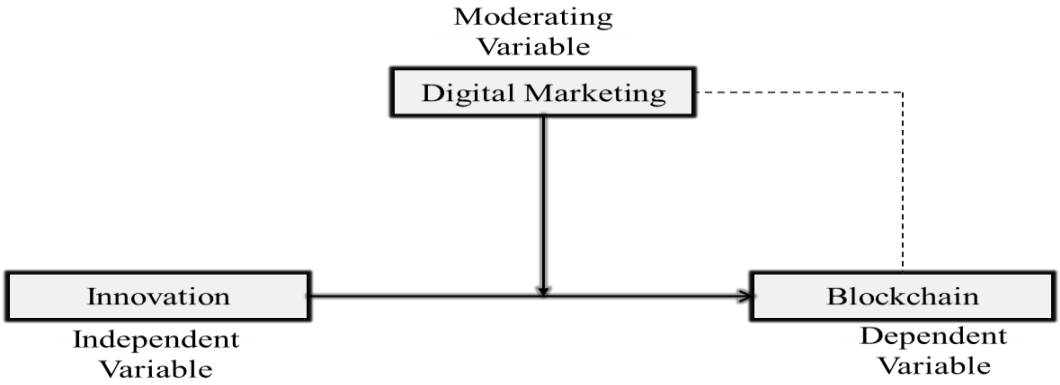
H2: Digital marketing has moderating impact on innovation and blockchain.

H3: Adoption of blockchain positive relationship with digital marketing.

The evidence provides about the adoption of blockchain and its relationship with digital marketing and impact on different marketing area, the hypothesis can be created.

A conceptual framework will be created to give the research direction based on the information and understanding gleaned from earlier literature. Numerous problems and difficulties have been examined in the literature review, and the following idea has been selected in light of that literature review. (Ticehurst & Veal, 2000), the theoretical framework demonstrates how the researchers, in, interpret relationships among various concepts that are part of the study.

Research Model



In this research innovation act as independent variable in the framework. Blockchain work as the dependent variable. Moreover, digital marketing act as a moderating variable in between innovation and blockchain. Framework represents that digital marketing play a moderating role with innovation and blockchain

3. Research Methodology

Research approach

This study will compare qualitative and quantitative data. 1988 (K. R. Howe) The pragmatic approach has always favoured combining methods. This argument claims that quantitative and qualitative methods do not clash at any level of practise, and researchers should not fear following what works. The researcher will use mixed method and multi-level triangulation design. This style is from (Creswell & Clark, 2017). The principle of triangulation design allows several sources of data on the same subject to provide a precise and persuasive research result. As a multi-level approach allows for the gathering of several sources of information at different periods with different degrees of detail, the researcher believes it is best for this study.

Research Design

In the research design a researcher can achieve their fundamental study aims by using the overall strategy. The research supports the descriptive research in which data was concentrated through 2015 – 2022 and data were collected through Primary data and secondary data. Primary data was used by taking survey through questionnaire and secondary data used by taking interview through

digital marketers and blockchain experts. This questionnaire will be sent to people working in digital marketing companies.

Sampling Description

Non-probability sampling has been utilized to choose the sample because the size of the population in this research project is unclear. When there is a non-equal chance of selecting any respondent, this sampling strategy is used. The data collection strategy employed in this study was convenience sampling. Using this sampling technique makes data processing and administration considerably simpler because and expensive to collect and analyze data from the complete population. In order to gather data, convenience sampling approach has been applied. Because the size of population as whole is not precisely known, we are unable to calculate the sample size. Due to the large number of questions in the survey and the difficulty in getting replies from every participant due to hectic work schedules, convenience sampling was utilizing in this study.

Data Collection

The researcher used a 'questionnaire' and 'convenience sampling method' to obtain data. The new questionnaire will incorporate demographics, dependent, and independent components. The researcher will distribute 540 questionnaires. The research will use a one-page questionnaire. Digital marketers get this quiz by email. The researcher used a five-point Likert scale from (1) "Strongly Disagree" to (5) "Strongly Agree". To ensure data quality, respondents collected data in different methods at many periods. Data quality will be evaluated throughout data collection to make this study valuable for future researchers.

3-5 semi-structured interviews will establish how block chain technology may aid marketers and affect digital marketing trends. Block chain technology may change consumer and corporate digital marketing. Interviews are an economical and flexible technique to gather research data.

These data collection methods help us understand how block chain technology may impact digital marketing and benefit marketers. Blockchain might change digital marketing for consumers and marketers. Data collecting is an effective and flexible technique to investigate a subject.

Selection of Respondent

The information was gathering through questionnaires that are focused on the variables that define in research. Data for this study were gathered using survey questionnaire that include all variables that are used in this research. The participants in research are unknown population employees and managers and also specialists that review sample size 300 with different digital marketers, influencer's social media and blockchain experts, freelancers through online survey and some email data collected procedure.

Data Analysis

Various analytical methods are used to analyze intricate interactions between variables.by using SPSS software and Microsoft Excel. The main aim of applying statistical analysis to data in order to identify trends and develop solutions in the main goal of data analytics. The research study has found that data analysis is increasingly crucial for understanding and influencing research methodology as well as for enhancing decision-making. Descriptive analysis, Regression analysis. Demographic analysis is conducted in the data collection for the research study.

4. Results and Discussions

Introduction

The researcher collected data using a Google Forms survey titled "Impact of innovation on adoption of blockchain technology with the moderating role of digital marketing" for this empirical investigation. The survey URL is here.

This chapter displays the research data analysis. This chapter briefly discusses respondent demographics. Data analysis in this study aims for accuracy and reliability. Avoid statistical mistakes and learn how to manage outliers, missing data, data mining, and graphs. The Google Forms survey "Impact of innovation on adoption of blockchain technology with the moderating role of digital marketing" was the main data gathering strategy for this empirical investigation.

No	Close-ended question type	Responses
1	Do you agree?	1) Strongly agree; 2) Agree; 3) Neutral; 4) Disagree; 5) Strongly disagree

Descriptive analysis

Table no 4.1

Statistics

		Gender of Respondent	Age of Respondents	Education of respondents	Designation of respondents
N	**Valid**	300	300	300	300
	Missing	2	2	2	2
Mean		1.38	2.64	3.34	4.94
Median		1.00	3.00	3.00	3.00
Mode		1	2	3	2
Std. Deviation		.485	.770	.554	3.833

In the table 4.1 shows the descriptive analysis collected for the research thesis. Total 300 responses were collected. The majority students of respondents belong to code 1 i.e. male. The age mean value code 2.6 which shows that age group of the respondents between 15-20 and 31-35. For

education the mean value of the respondents 3.3 which shows that the maximum respondents qualification Graduate and Masters. Likewise, the mean value of Designation 4.9.

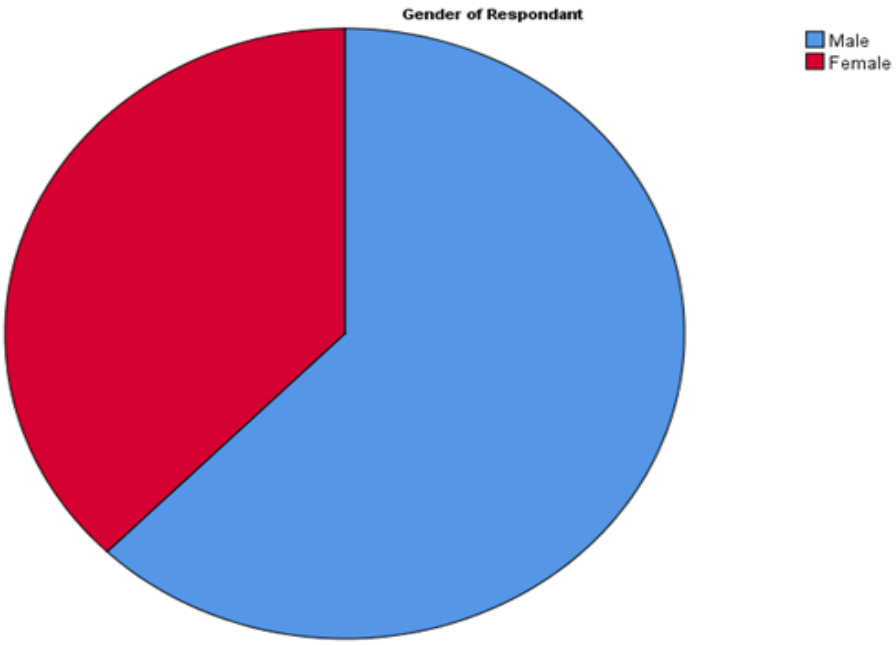
Demographic of the Respondents

In this section shows the detailed analysis demographic analysis of the respondents.

Gender Table no 4.2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	**Male**	187	61.9	62.3	62.3
	Female	113	37.4	37.7	100.0
	Total	300	99.3	100.0	
Missing	**System**	2	.7		
Total		300	100.0		

Gender of the Respondent



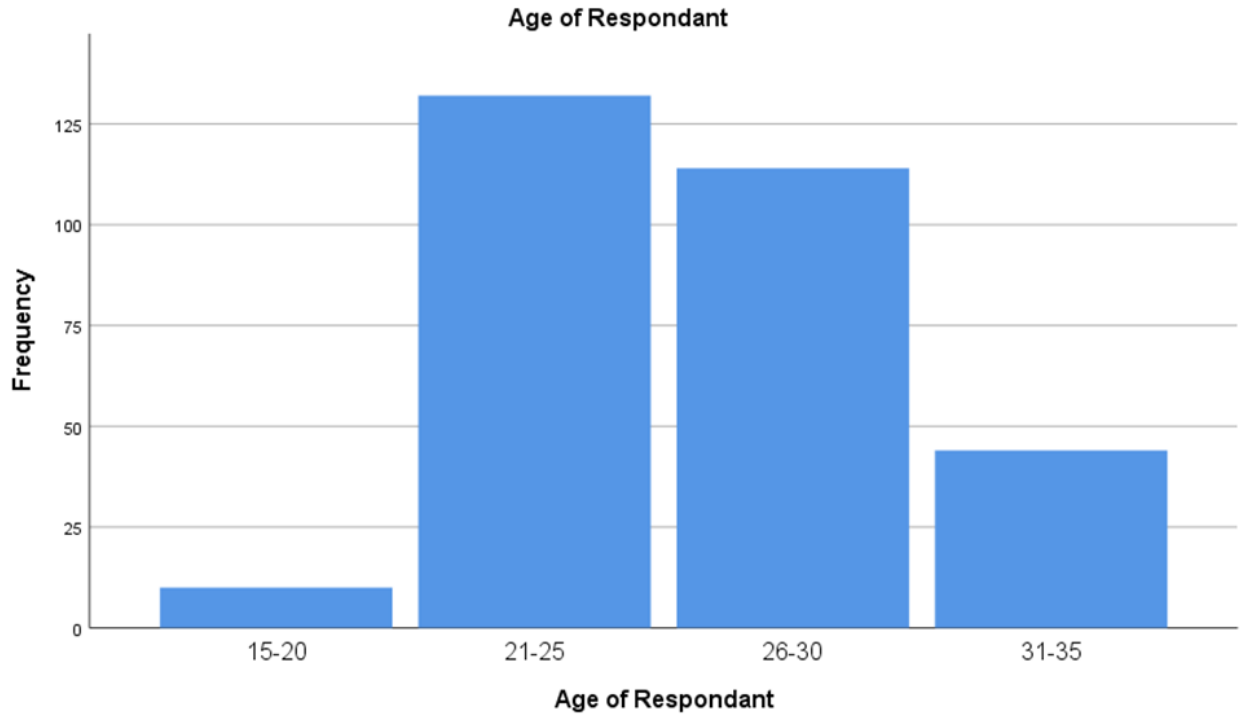
The table 4.2 shows that gender of the respondents. Most of the respondents 187. The percentage of female respondent lower than the male respondents which is 37.7 %.

Age

Table no 4.3

Age of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	**15-20**	10	3.3	3.3	3.3
	21-25	132	43.7	44.0	47.3
	26-30	114	37.7	38.0	85.3
	31-35	44	14.6	14.7	100.0
	Total	300	99.3	100.0	
Missing	**System**	2	.7		
Total		300	100.0		



When it comes to the age of the participants 3.3% belonged to (15-20) age group, 43.7% belonged to (21-25) age group, 37.7% belonged to (26-30) and 14.6% belonged to (31-35) age group. In Table 5.3 shows that most of the respondent's age number 132. The percentage 43.7% the age between (21-25).

Education

Table no 4.4

Education of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	**Intermediate**	12	4.0	4.0	4.0
	Graduate	173	57.3	57.7	61.7
	Master	115	38.1	38.3	100.0
	Total	300	99.3	100.0	
Missing	**System**	2	.7		
Total		300	100.0		

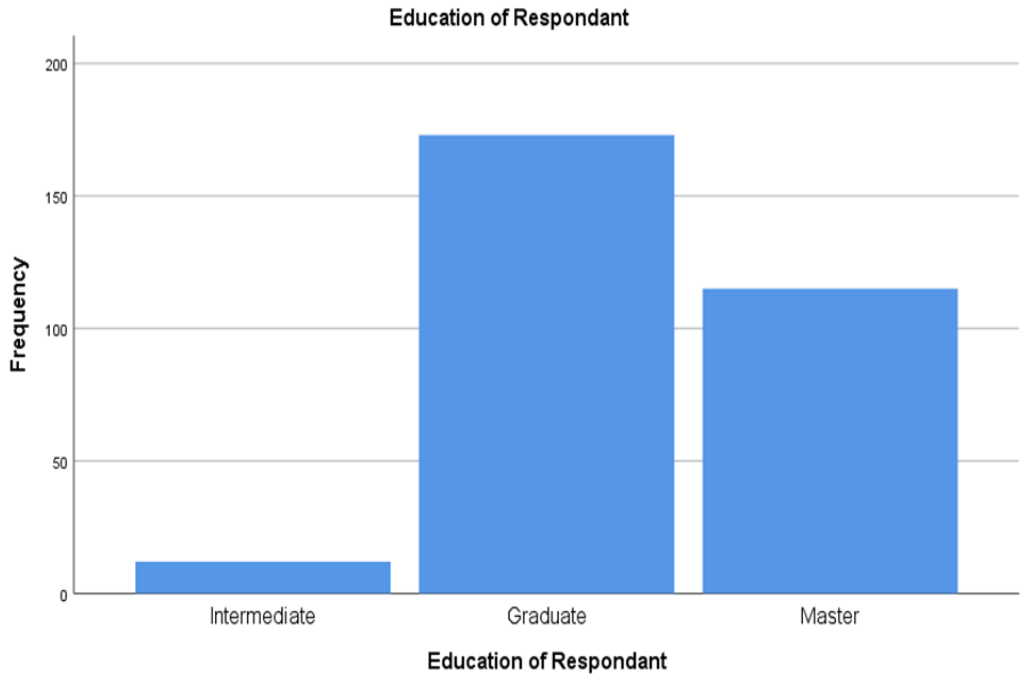


Table 4.4 survey shows that the education of the participants varied since 4.0% had done intermediate, 57.3% were graduates while 38.1% had masters that mostly included professionals of this field. Most of the respondents 173 in number and percentage 57.3 % of the respondents the education Graduate.

Designation

Table 4.5 Designation of the respondents. The number of the respondents 72 and percentage of the respondents 23.8 % Most of the respondents designation is assistant marketing manager.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Marketing Manager	35	11.6	11.7	11.7
	Assistant Marketing Manager	72	23.8	24.0	35.7
	Junior Marketing Executive	55	18.2	18.3	54.0
	Sales	24	7.9	8.0	62.0
	Project manager	8	2.6	2.7	64.7
	Digital Marketer & SEO Specialist	18	6.0	6.0	70.7
	Content writing	20	6.6	6.7	77.3
	Freelancing	5	1.7	1.7	79.0
	Plant Accountant	7	2.3	2.3	81.3
	Operation Management	31	10.3	10.3	91.7
	Marketing CEO	4	1.3	1.3	93.0
	Blockchain engineer	4	1.3	1.3	94.3
	Social media Marketing	2	.7	.7	95.0
	Digital Marketing Analyst	3	1.0	1.0	96.0
	Co-founder Digital Marketing Agency	12	4.0	4.0	100.0
	Total	300	99.3	100.0	
Missing	System	2	.7		
Total		300	100.0		

Correlations Examination

Correlation analysis is statistical method used in research to identify the relationships between variables and access how strongly they are related. +1 shows positive relationship between variables and -1 shows or less than 0 relationship shows the negative relationship between the variables

Table no 4.6

Correlations

		Innovation	Digital Marketing	Company using Blockchain activity	Blockchain
Innovation	**Pearson Correlation**	1	.612**	.642**	.872**
	Sig. (2-tailed)		.000	.000	.000
	N	300	300	300	300
Digital marketing	**Pearson Correlation**	.612**	1	.541**	.862**
	Sig. (2-tailed)	.000		.000	.000
	N	300	300	300	300
Company Activity	**Pearson Correlation**	.642**	.541**	1	.830**
	Sig. (2-tailed)	.000	.000		.000
	N	300	300	300	300
Blockchain	**Pearson Correlation**	.872**	.862**	.830**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	300	300	300	300

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

From the table 4.6 you can see that all variables show the positive relationship which means that all variable co related with each other as the p-value of all variables is less than 0.05

Normality test

By using SPSS in normality test, we can learn more about the dataset and finally choose which statistical test to run. The determination of normality is a crucial step choosing the statistical techniques and measurements of central tendency for data examination. Parametric tests are used to compare the groups when our data have normal distribution; otherwise, nonparametric approaches are used.

Descriptive Statistics

Table no 4.8

In this Table 4.8 was used and descriptive statistics use to analysis the data which was used to see minimum and maximum values explained by mean and standard deviation. Kurtosis is three and skewness is zero for normal distribution. The test is based on how much the data skewness deviates from zero and how much far its kurtosis deviates from three. When the p-value is less than or equal to 0.05, the test rejects the null hypothesis of normality.

4.7: ANOVA Analysis

One-way Anova is typically used to determine whether fluctuations or varying levels of single independent variable have a discernible effect on dependent variable.

Table no 5.9

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1358.841	1	1358.841	191.094	.000[b]
	Residual	2119.039	298	7.111		
	Total	3477.880	299			

a. **Dependent Variable: DV Blockchain**
b. **Predictors: (Constant), IV Innovation**

ANOVA

	N	Mean		Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Statistic	Std. Error	Statistic	Std. Error
Blockchain (DV)	300	27.9800	.19691	3.41053	-1.288	.141	5.078	.281
Innovation (IV)	300	28.4967	.21584	3.73853	-1.605	.141	5.842	.281
Digital Marketing (MV)	300	37.4000	.25279	4.37842	-1.288	.141	5.491	.281
Company using Blockchain activity	300	29.1100	.19847	3.43763	-.791	.141	.621	.281
Valid N (listwise)	300							

In Table no 4.9 anova results shows that the connection between a single independent variable (Blockchain) with Dependent variable (Innovation) is significant beacause the P-value less than

Hypothesis Test analysis

In hypothesis testing we used the simple linear regression. Simple liner regression is statistical method which apply a formula to predict the value of the variable, which show the effect of the relationship between variables.

Regression Analysis

Regression analysis is a powerful statistical method that enables we can explore the relationship between two or more variables. Regression examination comes in various forms, but they all fundamentally examine how one or more independent variables effect the dependent variable.

Hypothesis 1: Innovation is positive relationship with blockhain

Table no 4.10

Model Summary

	R	R Square	Model Significance value
1	.872[a]	.761	.000[b]

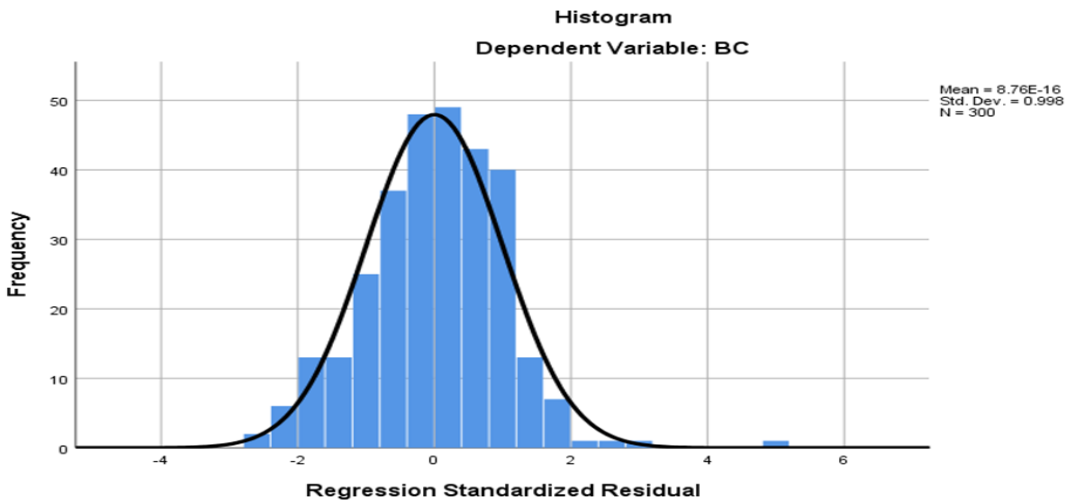
a. **Predictors: (Constant), Innovation**
b. **DV: Blockchain**

In this the R square value of the model summary displays H1 is .761 of the variance in data is being explained by the predictor. Here the model significance value fit the value must be less than 0.05. 0.000 shows the positive relationship between hypotheses. We can shows that the data fit on the table fit in hypothesis and makes positive relationship between both variables.

Coefficients

		Unstandardized Coefficients		Standardized Coefficients		
Model		**B**	**Std. Error**	**Beta**	**t**	**Sig.**
1	(Constant)	29.251	2.153		13.584	.000
	Innovation	2.307	.075	.872	30.798	.000

a. **DV: Blockchain**



In the table 4.9 the regression analysis test is employed to check the direct impact of independent variable on dependent variable. The beta coefficient is positive value. For the hypothesis to be

accepted the beta value must be positive. Which shows that the innovation positively effect on blockchain

Hypothesis2: Digital marketing will moderate relationship between innovation and blockchain

Table no 4. 11

Model Summary

Model	R	R Square	Std. Error of the Estimate
1	.646 [a]	.418	.000[b]

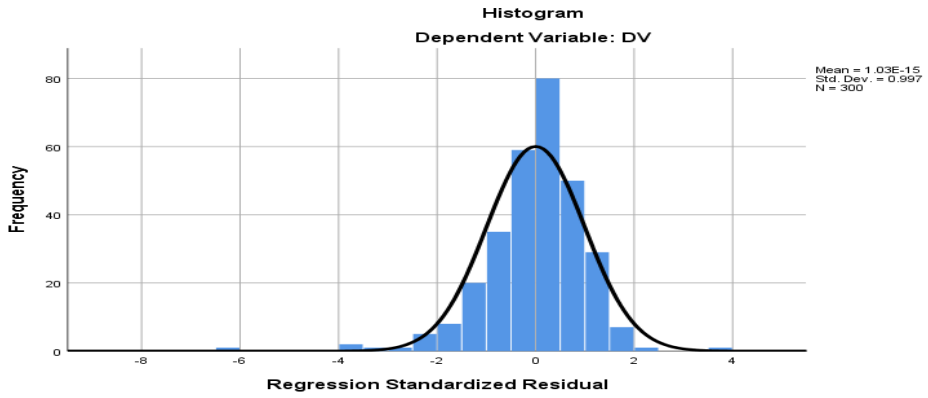
a. **Predictors: Innovation IV, Digital marketing MV**
b. **Dependent Variable: DV**

In this R square value in the model summary shows that H2 is .418 of the variance in data is being explained by the predictor. Here the model significance value fit the value must be less than 0.05. 0.000 shows the positive relationship between hypotheses. We can shows that the data fit on the table fit in hypothesis and makes positive relationship between variables

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	**(Constant)**	20.417	2.620		7.794	.000
	Digital marketing (MV)	.707	.191	.372	3.699	.000
	Innovation (IV)	.265	.092	.291	2.892	.004

a. **Blockchain: DV**



In the Table 4.10 co-efficient the regression analysis test are used to verify the moderating impact of digital marketing in innovation and blockchain. In this analysis that show the positive relationship between these variables and positive impact between the variables. In this part the beta value shows strong relation between the variables. The beta value neither be lower and greater than 0.05. In this the significance value 0.000 acceptable.

Hypothesis 3: Digital marketing show positive relationship with blockchain

Table no 4.12

Model Summary[b]

Model	R	R Square	Std. Error of the Estimate
1	.633[a]	.401	. .000 [b]

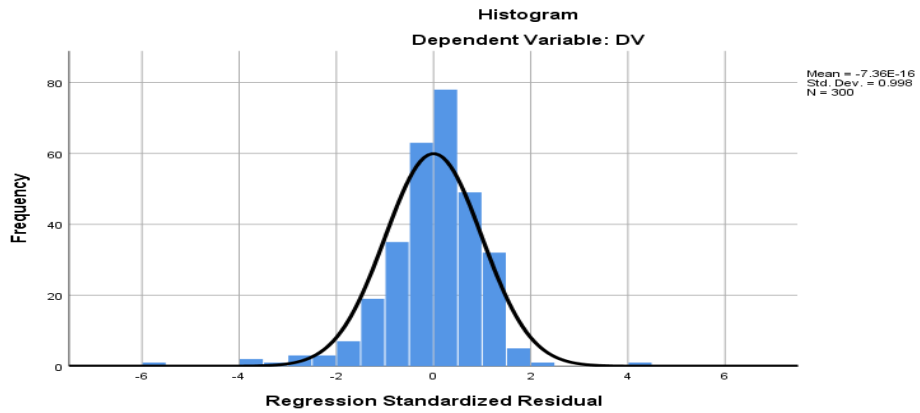
a. **Digital marketing MV**
b. **Blockchain DV**

In this R square value in the model summary is H3 is .401 of the variance in data is being explained by the predictor. Here the model significance value fit the value must be less than 0.05. 0.000 shows the positive relationship between hypotheses. We can shows that the data fit on the table fit in hypothesis and makes positive relationship between moderating and dependent variable.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	**Std. Error**	**Beta**	**t**	**Sig.**
1	**(Constant)**	27.980	.153		183.315	.000
	V	1.203	.085	.633	14.128	.000

a. **Dependent Variable: DV**



In the Table 4.11 co-efficient the regression analysis test is used to verify the moderating effect of digital marketing in blockchain. In this analysis that show the positive relationship between these two variables and positive impact between the variables. In this part the beta value shows the good relation between the variables. The beta value not be lower and greater than 0.05. In this the significance value 0.000 acceptable.

Hypothesis Test Results

Results shows that **H1** Impact of innovation in blockchain makes the positive relationship because the R square .761 and significance value 0.00 so this hypothesis is accepted.

H2 also shows the positive relationship because the R square value .418 and significant value 0.00 that shows the positive relationship and beta value also shows the positive so this hypothesis also accepted.

H3 also shows the positive relationship because the R square value .401 and significant value 0.00 that shows the positive relationship and beta value also shows the positive so this hypothesis also accepted.

Conclusion and Recommendations

This chapter would summaries the thesis' findings and offer a response to the research question. This chapter also attempts to examine the contributions made by this thesis. Finally, the limitations of this thesis would be evaluated, while recommendations for further research will be given.

Conclusion

The study concludes that the integration of blockchain technology significantly impacts big data and digital marketing. It suggests that blockchain enhances data reliability, ownership, and value, making traditional data inferior. Additionally, the findings indicate that blockchain implementation prompts a shift toward consumer-focused marketing, urging organizations to engage in more thoughtful and personalized conversations to meet customer demands. Despite the potential benefits, the study emphasizes that failure to adapt to these changes may leave digital marketers with reduced access to valuable consumer data, impacting their marketing strategies. Overall, the study underscores the significance of blockchain in enhancing transparency, trust, and reliability in the digital marketing landscape, while also highlighting the need for proactive adaptation to this evolving technological shift.

Recommendations

The study highlights blockchain's substantial influence on big data and digital marketing, emphasizing improved data reliability and a shift towards consumer-eccentric strategies. It underscores the importance of adapting to blockchain technology to maintain access to valuable consumer data, while emphasizing its role in fostering transparency and trust within the digital

marketing sphere.

The Future of Blockchain in digital marketing

The interviewees unanimously acknowledge blockchain's potential in shaping the future of digital marketing, foreseeing significant shifts in data collection and tracking methods. While Muhammad Faisal emphasizes the integration of blockchain with current technologies for enhanced data tracking, Qadir Khan emphasizes the transformative impact of blockchain on trust and transparency, foreseeing substantial changes in business operations and the digital marketing landscape. Additionally, Sabahat Ali anticipates blockchain's role in empowering individuals to control their personal data, while acknowledging potential resistance from large corporations and the need for proactive political influence.

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