

Regulatory Approaches to Crypto currency: A Global Comparative Study

Dr. Manu Umesh
Assistant Professor
Shyamlal College (E)
University of Delhi

Richa Verma
Lecturer of Commerce
DAV. C. PUBLIC SCHOOL, JIND

Abstract:

In an era defined by rapid technological advancement and financial innovation, the ascent of crypto currencies has woven a captivating narrative that transcends borders and conventional financial paradigms. This abstract casts a spotlight on a pioneering research endeavor: a global comparative study of regulatory approaches to crypto currencies. As these digital assets challenge traditional notions of currency, governance, and economic sovereignty, governments worldwide grapple with the imperative to cultivate regulatory frameworks that navigate this uncharted terrain. This study embarks on a journey across continents, delving into the multifaceted approaches embraced by nations to address the complexities posed by crypto currencies. From prohibition to strategic integration, each regulatory strategy unveils its own tapestry of strengths, weaknesses, opportunities, and threats. Amidst this diverse panorama, a thread of common themes emerges - the quest to balance innovation with safeguarding, to facilitate financial inclusion without compromising integrity.

Drawing insights from an eclectic array of regulatory philosophies, this study paves a contemplative path through the labyrinthine corridors of crypto currency governance. As technological dynamism propels the evolution of this landscape, the potency of each regulatory approach crystallizes, underscored by the harmony or dissonance it achieves with the ever-shifting crypto narrative.

In traversing the gamut of global regulatory strategies, this research not only contributes to the discourse on crypto currency governance but also resonates with broader conversations on technological governance in a hyper connected world. Through this comprehensive exploration, the study advances a profound understanding of how nations navigate the virtual frontiers of financial innovation, anchoring their aspirations to a future where crypto currencies thrive in symbiotic synergy with robust regulatory frameworks.

Introduction:

Crypto currency began with the introduction of Bitcoin in 2009 by an anonymous entity using the pseudonym Satoshi Nakamoto. Bitcoin's underlying technology, block chain, revolutionized transactional security and transparency. Since then, numerous alternative crypto currencies have emerged, each with its own unique features and use cases. In the contemporary financial landscape, the emergence of crypto currencies has ignited a profound transformation, challenging traditional notions of currency, finance, and governance. As these digital assets continue to transcend geographical boundaries and infiltrate mainstream economic activities, governments around the world find themselves at a crossroads – tasked with the formidable responsibility of establishing regulatory frameworks that strike a harmonious balance between harnessing the potential of innovation and safeguarding against unforeseen risks. This research embarks on an exploratory journey into the dynamic realm of crypto currency regulation, emboldened by a global comparative lens. Delving into a myriad of regulatory approaches adopted by diverse nations, this study aims to unravel the intricate tapestry of strategies devised to navigate the intricate nuances of a rapidly evolving ecosystem.

Amidst an ever-expanding landscape of technological innovation, the seismic impact of crypto currencies reverberates far beyond their digital confines. Their decentralized nature challenges the very fabric of conventional financial architectures, inviting unprecedented opportunities for economic democratization and financial inclusion. Yet, concurrently, their relative anonymity and potential for illicit activities have spurred calls for robust oversight. Navigating this intricate terrain requires regulators to be not only forward-looking but also adaptive to the dynamic interplay between technological advancement and societal needs.

By undertaking a comprehensive and systematic exploration of the regulatory approaches to cryptocurrencies across the globe, this study endeavors to unearth the diverse methodologies that nations have constructed in response to this multifaceted challenge. As policymakers grapple with the complexities of addressing borderless and intangible assets, the efficacy of each regulatory approach reveals itself, painting a vivid picture of the delicate equilibrium that must be struck. From outright prohibition to fostering innovation within controlled environments, each approach carries its unique advantages and vulnerabilities. Through meticulous examination and astute comparison, this research endeavors to illuminate the wisdom and potential pitfalls inherent in each strategy.

In the pages that follow, a panoramic view of regulatory landscapes across different continents will be unfurled, allowing for an enriched understanding of the global regulatory mosaic. The insights garnered from this study not only contribute to the ongoing discourse on cryptocurrency regulation but also hold profound implications for the broader domain of technological governance. As the narrative of crypto currencies unfolds, regulatory paradigms must rise to the occasion, navigating the intricacies of innovation with an unwavering commitment to the greater good.

In the heart of this intricate confluence of finance, technology, and governance, lies the essence of this research – an inquisitive exploration of regulatory responses to cryptocurrencies that seeks to illuminate the path toward a more informed and harmonious future.

Literature Review

David LEE Kuo Chuen, Li Guo and Yu Wang (2018): The objective of paper is to help out the reader to comprehend the crypto currencies and evaluate their risk and return characteristics utilizing portfolio of crypto currencies demonstrated by the crypto currency index. The consequences of the study depicts that the return correlations between crypto currencies and traditional assets are low.

Jaysing Bhosale, Sushil Mavale (2018): The paper determines that virtual currency and its fluctuation are increasing, crypto currencies various transaction are adopted worldwide-legal as well as illegal. The earned huge returns from crypto currency investments but simultaneously a question arises on their existences and creditability. Crypto currency is the currency that uses crypto-graphy for security purpose. The study highlights the comparison of 3 crypto currencies by comprehending their fluctuation and stability trends in present times.

EIBahrawy A, Alessandretti L, Kandler A, PastorSatorras R, Baronchelli A (2017): The paper focused on the attitude of some crypto currencies. The study considered entire market history and examined the attitude of crypto currencies. They revealed the increasing market capitalization of crypto currencies while new currencies are appearing and disappearing, they considered some stable years for several statistical properties of market. The consequences of study sheds light on the stuff of the crypto currency market and introduced a formal link between ecological modeling and the study of this growing system.

Sha Wang, Jean-Philippe Vergne (2017): This paper recognized the elements connected with the difference in crypto currencies market values. Earlier there was an argument that the buzz encompassed crypto currencies in online media defined a difference in their prices. By contrast, we discover that the buzz encompassed crypto currencies are negatively connected with returns. Later controlling the variations in elements such as growth of supply and liquidity, eventually they discover that growth in supply is positively connected with weekly returns and crypto currencies not act as traditional currencies.

Ahmed Muzakkir Syed, Jamal Ahmed Moge, Mohammed Shandar Siddiqui (2016): The paper determines that currency system has continuously developing. In the time of information technology, the

currency system is stepping into next level that is digital currency, crypto currencies are kind off open source algorithms that facilitates peer to peer networking without the need for arbitration and making it decentralized. This creates a system of tremendous economic potential.

Peter D. De Vries (2016): The paper determines that the crypto currency is an encrypted peer to peer network for digital transaction, intentions of crypto currencies are not replacing the traditional fiat currency but they could change the internet connection global markets and interact with each other. Crypto currencies may change digital trade market by innovating free flowing trading systems.

Eli Dourado and Jerry Brito (2014): The paper highlights that the fiat currency is a recently evolving and it is dominant form of money. Crypto currency is neither fiat money nor commodity. Crypto currency is a kind of experiments which may or may not succeed, but surely we can experience a mix of technical monetary features that enhance economic questions and other currency. The paper sheds on crypto currencies and comprehends its features and understands its problem to be solved. They begin with problems which trouble digital cash earlier and technical advancement that makes crypto currencies possible.

M Shoaib, M Ilyas, M sikandar Hayat Khiyal (2013) : The paper talks about the medium of exchange in olden days was barter system and highlight that now paper currency is accepted as common medium of trade. The paper found some flaws they are first; they say that the currency holder is always at risk because of robbery and theft. Second, heavy cost is caused in printing and transferring pc. Third, says that counterfeit two currencies is a challenge for currency issuing authorities. Many organizations have initiated digital currency but hardly of them were governed by government. This paper established Official digital currency system which is issued and controlled by state and central banks.

Objective of the Study

1. To learn the impact of crypto currency on global level.
2. Better understanding towards Bitcoin / Ethereum (ETH)
3. Study Regulatory Approaches to Cryptocurrency
4. SWOT Analysis

Research Methodology:

RESEARCH USED

Research can be classified in many different ways on the basis of methodology of the research, the knowledge it creates, the user groups, the research problem it investigates, etc. Following is the methodology that we have used in research:

Quantitative Research:

In natural and social sciences, and sometimes in other fields, quantitative research is the systematic empirical investigation of observable phenomena via statistical, mathematical, or computational techniques. The objective of quantitative research is to develop and employ mathematical models, theories, and hypotheses pertaining to phenomena. The process of measurement is central to quantitative research because it provides the fundamental connection between empirical observation and mathematical expression of quantitative relationships.

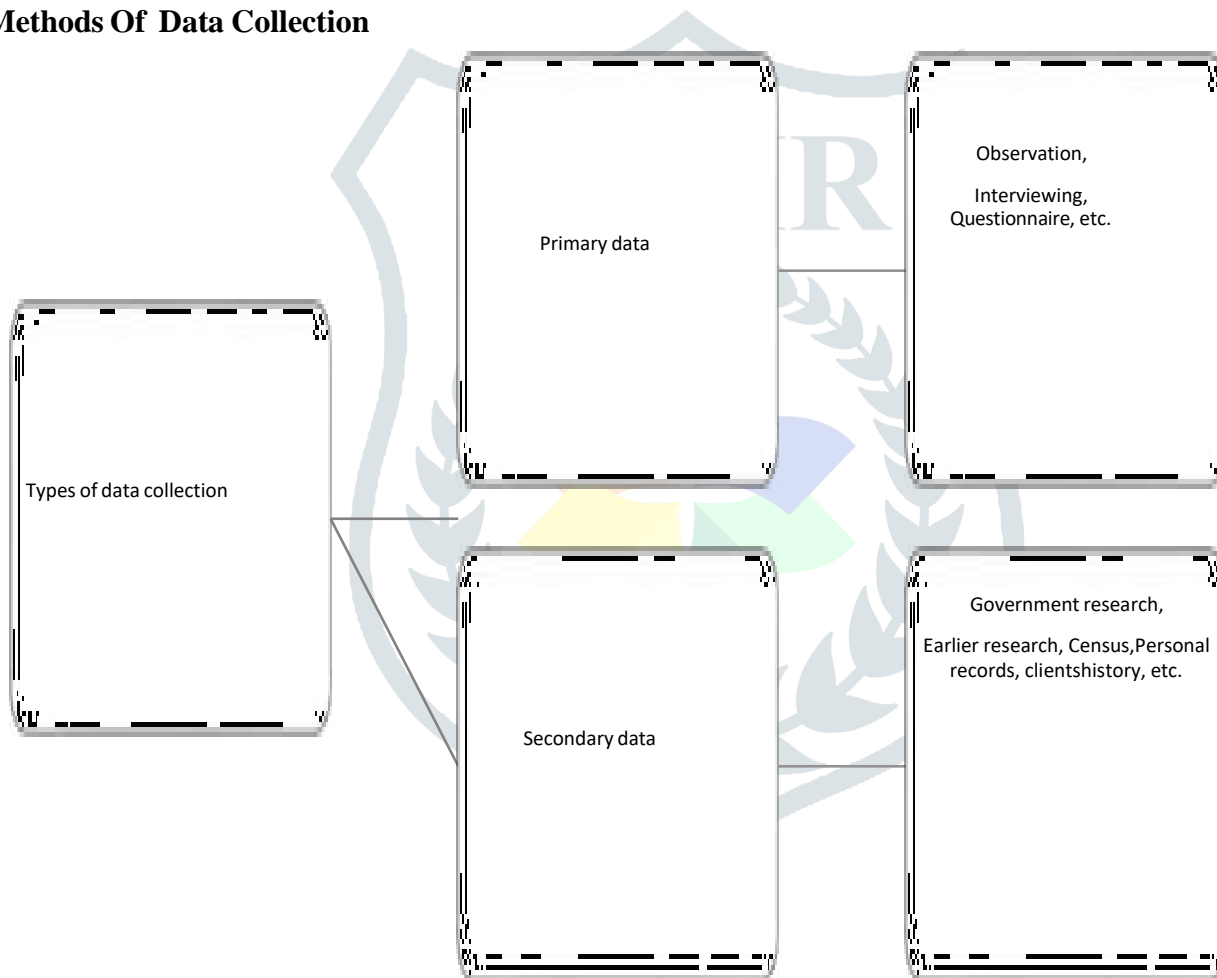
Quantitative research is generally closely affiliated with ideas from 'the scientific method', which can include:

- The generation of models, theories and hypotheses.
- The development of instruments and methods for measurement.
- Experimental control and manipulation of variables.
- Collection of empirical data
- Modelling and analysis of data.

QUANTITATIVE RESEARCH

ADVANTAGES	DISADVANTAGES
<ul style="list-style-type: none"> ● Specific research problem ● Clear independent and dependent variable ● High level of reliability ● Minimum personal judgement 	<ul style="list-style-type: none"> ● Limited outcomes due to structured method ● Unability to control the environment ● Expensive (large number of respondents)

Methods Of Data Collection



Secondary data is the data that have been already collected by and readily available from other sources. Such data are cheaper and more quickly obtainable than the primary data and also may be available when primary data cannot be obtained at all.













































































Here, various websites, books and journals are been referred for secondary data .






Data Interpretation

Objective 1

To learn the impact of crypto currency on global level

Source: PwC Global Crypto Regulation Report 2023

Jurisdiction	Regulatory framework	AML / CTF*	Travel rule	Stablecoins (used for payments)
United States				
United Kingdom				
Australia				
Austria				
Bahamas				
Bahrain				
Canada				
Cayman Islands				
China (Mainland)				
Denmark				
Estonia				
France				
Germany				
Gibraltar				
Hong Kong				
Hungary				
India				
Italy				
Japan				

 Legislation / Regulation in place
  Pending final legislation
  Process initiated or plans communicated
 Regulatory process not initiated
  The country prohibits cryptocurrencies

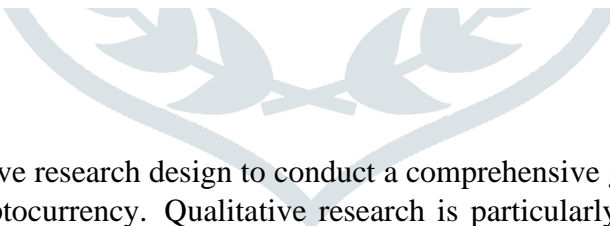
*Anti-Money Laundering / Counter-Terrorist Financing. In this report, the term Combating the Financing of Terrorism (CFT) is also used.

The regulatory assessment is based on the analysis undertaken by individual PwC member firms.

Jurisdiction	Regulatory framework	AML / CTF*	Travel rule	Stablecoins (used for payments)
Jordan**	⚠	✓	⚠	⚠
Kuwait	⚠	⚠	⚠	⚠
Luxembourg	🔄	✓	🔄	🔄
Malaysia	✓	✓	✓	⚠
Mauritius	✓	✓	✓	✓
New Zealand	🔄	🔄	⚠	🔄
Oman	⚠	⚠	⚠	⚠
Panama	🔄	🔄	⚠	⚠
Qatar	✘	✘	✘	✘
Saudi Arabia	✘	✘	✘	✘
Singapore	✓	✓	✓	🔄
South Africa	🔄	✓	🔄	🔄
Switzerland	✓	✓	✓	✓
Taiwan	⚠	✓	✓	⚠
Turkey***	⚠	✓	⚠	⚠
United Arab Emirates	✓	✓	✓	✍

✓ Legislation / Regulation in place ✍ Pending final legislation 🔄 Process initiated or plans communicated
 ⚠ Regulatory process not initiated ✘ The country prohibits cryptocurrencies

*Anti-Money Laundering / Counter-Terrorist Financing. In this report, the term Combating the Financing of Terrorism (CFT) is also used.
 **The Central Bank of Jordan prohibits banks, currency exchanges, financial companies, and payment service companies from dealing in digital currencies. While it has warned the public of the risks of private digital currencies and they are not legal tender, payments may still be accepted by small businesses and merchants.
 ***The Central Bank of Republic of Turkey prohibits the direct or indirect use of crypto-assets that are not qualified as fiat currency, fiduciary money, electronic money, payment instrument, securities or other capital market instruments in payments.



Research Design:

This study employs a qualitative research design to conduct a comprehensive global comparative analysis of regulatory approaches to cryptocurrency. Qualitative research is particularly suited to exploring complex and multifaceted phenomena, such as the diverse regulatory strategies adopted by different countries.

Objective2

1. Better understanding towards Bitcoin / Ethereum (ETH)

Comparative study of Two Popular Cryptocurrencies

Basis	Bitcoin (BTC)	Ethereum (ETH)
Purpose and Function	Primarily designed as a digital currency for peer-to-peer transactions and a store of value, often referred to as "digital gold."	Designed as a platform for decentralized applications (DApPs) and smart contracts, enabling developers to build a wide range of applications beyond simple transactions

Launch Year:	2009	2015
Founder(s):	Satoshi Nakamoto (pseudonymous)	VitalikButerin, along with a team ofco-founders
Supply:	Capped supply of 21 million coins, making it deflationary in nature.	There is no hard supply cap; issuance rate has been changing over time due to network upgrades.
Blockchain Technology:	Uses a Proof of Work (PoW) consensus mechanism, where miners compete to solve complex mathematical puzzles to validate transactions and add blocks to the blockchain.	Transitioning from PoW to Proof of Stake (PoS) with Ethereum 2.0, which relies on validators instead of miners and aims to improve scalability and energy efficiency.
Smart Contracts:	Supports simple scripting language for basic operations	Offers a Turing-complete programming language, allowing developers to create complex smart contracts and decentralized applications.
Speed and Scalability:	Typically slower transaction confirmation times and limited scalability, with an average of around 7 transactions per second.	Faster transaction times but still faces scalability challenges, with plans for improvement through Ethereum 2.0.
Use Cases:	Mainly used as a store of value, investment, and digital currency for transactions	Widely used for creating and deploying decentralized applications, including DeFi platforms, NFT marketplaces, and more.
Market Capitalization:	One of the largest cryptocurrencies by market capitalization	Another significant cryptocurrency in terms of market capitalization, often referred to as the "world computer."

These are some of the key comparative details between Bitcoin and Ethereum. Keep in mind that the cryptocurrency landscape is dynamic, and developments may have occurred since the last update. It's important to conduct thorough research before making any decisions related to cryptocurrency investments or usage.

Objective 3

Study Regulatory Approaches to Cryptocurrency

A) To Examine Diverse Regulatory Approaches:

The primary objective of this research paper is to comprehensively examine the diverse regulatory approaches adopted by different countries and regions towards cryptocurrency. By analyzing the distinct strategies employed, this study seeks to uncover the range of philosophies and methodologies used to govern the cryptocurrency ecosystem.

B) To Compare Strengths and Weaknesses:

Another key objective is to conduct a comparative analysis of the strengths and weaknesses associated with each regulatory approach. Through systematic evaluation, the study aims to identify the advantages and vulnerabilities inherent in each strategy, shedding light on the implications of these approaches for innovation, investor protection, and financial stability.

C) To Assess Impacts on Innovation and Financial Inclusion:

This research paper aims to assess the impacts of regulatory approaches on technological innovation and financial inclusion, especially in developing economies. By analyzing how different regulations either promote or hinder innovation and inclusion, the study endeavors to provide insights into the role of regulations in shaping the cryptocurrency landscape.

D) To Explore Consumer Protection Measures:

The paper aims to explore the extent to which various regulatory approaches incorporate consumer protection measures. By examining the degree of transparency, risk disclosure, and dispute resolution mechanisms, the study seeks to understand how regulations safeguard cryptocurrency users' interests.

E) To Identify Common Themes and Trends:

One of the objectives is to identify common themes and trends that emerge from the comparative analysis. By examining similarities and divergences in regulatory strategies, the study aims to reveal overarching trends that may influence the future direction of cryptocurrency regulation.

F) To Provide Insights for Policymakers:

This research paper seeks to provide insights that can inform policymakers and regulators in their decision-making processes. By presenting a nuanced understanding of regulatory approaches, the study aims to contribute to informed policy discussions that balance technological innovation with regulatory oversight.

G) To Contribute to the Academic Discourse:

A key objective is to contribute to the academic discourse surrounding cryptocurrency governance. By offering a comprehensive analysis of regulatory paradigms, the study aims to add to the body of knowledge that informs discussions about the evolving landscape of digital currencies.

H) To Enhance Understanding of Global Cryptocurrency Ecosystem:

Finally, the research paper aims to enhance the broader understanding of the global cryptocurrency ecosystem. By shedding light on the intricate interplay between regulations, technological advancements, and economic considerations, the study seeks to enrich the comprehension of this rapidly evolving domain.

Objective 4

SWOT Analysis:

SWOT analysis focusing on the regulatory approaches to cryptocurrency:

Strengths	Weaknesses
<p>Diverse Regulatory Approaches: Different regulatory strategies accommodate the unique legal, economic, and technological considerations of each jurisdiction.</p>	<p>Lack of Uniformity: The lack of standardized regulations creates regulatory fragmentation and potential confusion for businesses and investors operating across borders.</p>
<p>Innovation and Flexibility: Some countries' sandbox initiatives foster innovation while providing a controlled environment for testing new cryptocurrency-related businesses.</p>	<p>Regulatory Arbitrage: Differences in regulations across jurisdictions could lead to regulatory arbitrage, where entities choose to operate in countries with more favorable regulations.</p>
<p>Investor Protection: Regulatory frameworks with consumer protection measures aim to prevent fraud, promote transparency, and ensure responsible investment.</p>	<p>Challenges in Implementation: Enforcing regulations in the decentralized and pseudonymous cryptocurrency space poses technological and logistical challenges.</p>
<p>Global Collaboration: International coordination efforts, such as those led by the</p>	<p>Uncertainty and Ambiguity: Rapidly</p>

FATF, enhance the global fight against money laundering and terrorist financing involving cryptocurrencies.	evolving technology often outpaces regulatory developments, leading to uncertainty and challenges in legal interpretation
Opportunities	Threats
<p>Innovative Approaches: Jurisdictions can learn from each other's successes and failures, adapting regulatory frameworks to best suit their own economic and technological context.</p> <p>Global Standards: Collaborative efforts can lead to the establishment of global standards, reducing regulatory arbitrage and enhancing consistency.</p> <p>Blockchain Applications: Effective regulations can encourage the responsible development of blockchain applications beyond cryptocurrencies, such as supply chain management and digital identities.</p> <p>Investor Confidence: Well-crafted regulations can improve investor confidence, attracting institutional investors to the cryptocurrency market.</p>	<p>Legislative Lag: Slow legislative processes may result in outdated regulations that fail to address emerging challenges in the cryptocurrency space.</p> <p>Inadequate Enforcement: Lack of effective enforcement mechanisms may enable illicit activities, undermining the integrity of the cryptocurrency ecosystem.</p> <p>Unintended Consequences: Stringent regulations might stifle innovation, drive businesses to operate in unregulated spaces, or inadvertently harm legitimate users.</p> <p>Cross-Border Challenges: Cross-border transactions and activities raise jurisdictional challenges, requiring international cooperation to address regulatory gaps.</p>

This SWOT analysis highlights the strengths, weaknesses, opportunities, and threats associated with the diverse regulatory approaches to cryptocurrency. It underscores the complexities regulators face in addressing the rapidly evolving cryptocurrency landscape while aiming to balance innovation, investor protection, and financial stability.

Conclusion:

In the evolving tapestry of cryptocurrency, regulatory approaches emerge as both the guardians and navigators of this uncharted landscape. As this study embarked on a global comparative exploration of these approaches, it became apparent that the cryptocurrency phenomenon encapsulates a myriad of complexities that transcend geographical borders. This conclusion, informed by a synthesis of findings, underscores the profound interplay between innovation, governance, and the relentless march of technology.

The diverse range of regulatory philosophies unearthed in this study, from outright prohibition to nurturing innovation through sandboxes, reflects the intricate dance between governments' desires to foster economic progress and their responsibility to protect their citizens. Each approach carries its own mosaic of strengths and vulnerabilities, often intertwined with the socio-economic, cultural, and political fabric of their respective jurisdictions.

The comparative analysis further accentuates the delicate balance that regulators strive to achieve. While some countries lean towards cautious restriction due to concerns of illicit activities, others embrace the potential for inclusivity and financial transformation. It is evident that there is no universal "one-size-fits-all" solution. Instead, the regulatory landscape stands as a testament to the diversity of human aspirations, the dynamism of innovation, and the perpetual challenge of balancing risk and reward.

Moreover, this study illuminates the need for a nuanced approach to crafting regulations. The regulatory responses to crypto currencies do not merely affect the digital domain but ripple through the broader ecosystem of finance, technology, and societal transformation. As the tapestry of regulation continues to be woven, policymakers are entrusted with the responsibility of cultivating frameworks that not only protect against risks but also cultivate environments conducive to innovation.

In the heart of these regulatory approaches, lies a profound call for global collaboration. The interconnected nature of cryptocurrencies traverses borders effortlessly, demanding cooperative efforts in addressing issues of money laundering, consumer protection, and harmonization of standards. The Financial Action Task Force (FATF) and other international bodies are exemplars of such collaboration, where nations strive to harmonize regulations for a safer and more inclusive digital landscape.

As the curtain falls on this study, its insights beckon policymakers, industry stakeholders, and academics to a continued discourse on cryptocurrency regulation. The journey is far from over; in fact, it has only just begun. From the depths of prohibition to the vistas of innovation, the world's approach to cryptocurrency regulation stands as a testimony to humanity's ability to adapt, envision, and navigate a brave new frontier where innovation and governance dance in harmony.

REFERENCES

- [1] David LEE Kuo Chuen, Li Guo and Yu Wang (2018), Cryptocurrency: A New Investment Opportunity? The Journal of Alternative Investments Winter 2018, 20 (3) 16-40; DOI: <https://doi.org/10.3905/jai.2018.20.3.016>.
- [2] Jaysing Bhosale, Sushil Mavale (2018), "Volatility of select Cryptocurrencies: A comparison of Bitcoin, Ethereum and Litecoin", Annual Research of Journal of SCMS, Pune. Vol. 6, March 2018.
- [3] ElBahrawy A, Alessandretti L, Kandler A, PastorSatorras R, Baronchelli A (2017), "Evolutionary dynamics of the cryptocurrency market". R. Soc. open sci. 4: 170623. <http://dx.doi.org/10.1098/rsos.170623>
- [4] Wang S, Vergne J-P (2017), Buzz Factor or Innovation Potential: What Explains Cryptocurrencies' Returns? PLoS ONE 12(1): e0169556. doi:10.1371/journal.pone.0169556
- [5] Ahmed Muzakkir Syed, Jamal Ahmed Moge, Mohammed Shandar Siddiqui (2016), "Cryptocurrency: Next level in the Evolution of Money". Asian Journal of Research in Business Economics and Management, vol. 6, No. 11, Nov 2016, pp 53-63, ISSN 2249-7307.
- [6] Peter D. De Vries (2016), "An Analysis of Cryptocurrency, Bitcoin and the future", International Journal of Business Management and Commerce, vol. 1, No. 2, Sep 2016.
- [7] Dourado, Eli & Brito, Jerry (2014). Cryptocurrency Ed by Durlauf, Steven N. & Blume, Lawrence E. The New Palgrave Dictionary of Economics, Online Edition, 2014. Available: <https://coincenter.org/wpcontent/uploads/2015/05/cryptocurrency-article.pdf>
- [8] M Shoaib, M Ilyas, M sikandar Hayat Khiyal (2013), "Official Digital Currency", conference paper, Eighth International Conference on Digital Information Management (ICDIM-2013) DOI:
- [9] Albrecht, C., Duffin, K.M., Hawkins, S. and Morales Rocha, V.M. (2019), "The use of cryptocurrencies in the money laundering process", Journal of Money Laundering Control, Vol. 22 No. 2, pp. 210-216.
- [10] APG (2016), "Anti-money laundering and counter-terrorist financing measures Bangladesh mutual evaluation report", available at: www.fatf-gafi.org/media/fatf/documents/reports/mer-fsrb/APGMER-Bangladesh-2016.pdf (accessed 10 March 2021).
- [11] APG (2009), "Mutual evaluations", available at: <http://apgml.org/mutual-evaluations/documents/default.aspx?s=date&c=8b7763bf-7f8b-45c2-b5c7-d783638f3354&pcPage=2> (accessed 12 April 2021).
- [12] Asian Development Bank (2019), "Asian development outlook 2019 strengthening disaster resilience, [13]manila, ADB", available at: www.adb.org/sites/default/files/publication/492711/ado2019.pdf (Accessed: 30 May 2020), p. 20 (accessed 10 October 2020).