International Journal of Economics, Business and Management Research

Vol. 9, No.02; 2025

ISSN: 2456-7760

Stakeholder Salience in the Cryptocurrency Ecosystem

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doi.org/10.51505/IJEBMR.2025.9216 URL: https://doi.org/10.51505/IJEBMR.2025.9216

Received: Feb 12, 2025 Accepted: Feb 18, 2025 Online Published: Feb 24, 2025

Abstract
Since Satoshi Nakamoto's emergence of the cryptocurrency concept in 2008, new crypto-like coins have been constantly created. This multiplicity of cryptocurrencies in the global financial system and their decentralized nature without government backing raises questions about who and what matters in the cryptocurrency ecosystem. This study aims to identify the stakeholders in the cryptocurrency ecosystem, their priority, and their influence in the crypto space value creation proposition using Mitchell et al. (1997) stakeholder salient model. The study utilized a hybrid research methodology, comprising a literature review and a Venn diagram, to analyse and apply the stakeholder salient model to the cryptocurrency ecosystem. The study results identified cryptocurrency creators, blockchain developers, government, cryptocurrency exchanges, cryptocurrency market makers, investors, miners, and ordinary citizens as stakeholders in the cryptocurrency ecosystem. The cryptocurrency ecosystem stakeholders were categorized into definitive, dominant, dependent, and demanding stakeholders, with cryptocurrency creators, blockchain developers, and the government identified as the most salient stakeholders in the cryptocurrency ecosystem. The study concludes that cryptocurrency creators cannot exist in isolation from the blockchain developer or the government; therefore, they should regard each other as key partners within the cryptocurrency ecosystem with frequent high-level policy decision meetings, personalized communication, and involve each other in critical decision-making in the cryptocurrency ecosystem value proposition.

Keywords: Cryptocurrency, Stakeholder Theory, Stakeholders identification Cryptocurrency ecosystem, Cryptocurrency Stakeholders, Stakeholders Salient Model, Cryptocurrency creators, Blockchain developers, cryptocurrency miners, cryptocurrency market makers, cryptocurrency exchanges.

1. Introduction

In an open society characterized by technological advancement, globalization and freedom of association, the populace is able to organize themselves to pursue a wide array of common interest and objectives (Berg et al.2018; Milutinović, 2018). These may include, digital innovation development, promotion of certain cause in the public interest, and to provide care and support for others (Berg et al., 2018). For example, the digital innovation objectives pursue amongst the digital currency interest group may be specific, or limited, in character or may

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convey a broader public purpose (Berg et al., 2018; Argandona, 2012). With each stakeholder representing an association of individuals or organization affiliating with each other to realize intrinsic and extrinsic values and facing several problems, concerns and challenges collectively (Berg et al., 2018; Argandona, 2012).

The pseudonym peer-to-peer cryptocurrencies are briskly transforming global markets and decentralizing interactions between households, consumers, miners, tax authorities, crypto exchanges, government regulators, and policymakers since its discovery by Nakamoto in 2008 (Nakamoto, 2009; Shin et al., 2022). For instance, as of 17 November 2024, national governments had over US$ 47.9 billion in cryptocurrency (Bitcoin Treasuries, 2024). In 2021, El Salvador, in a bid to promote financial inclusion and enhance the country's remittances and job creation, became the first country to adopt Bitcoin as a legal tender. Meanwhile, exchange-traded funds (ETF) firms held US$110.7 billion in cryptocurrency in their financial statements as of 17 November 2024 (Bitcoin Treasuries, 2024). Furthermore, Coin Gecko data on cryptocurrency indicates that publicly listed companies held a total of US$ 22.2 billion in cryptocurrency assets on their balance sheet as of 30 September 2024. Finally, according to Gannatti (2024) and Gensler (2024), on January 10, 2024, the Security Exchange Commission (SEC) approved the spot Bitcoin Exchange Trade Fund (ETF) in the Cryptocurrency ecosystem in the USA that have spilled over effect not only the US financial system but the world at large.

Despite these growth in the cryptocurrency ecosystems, a series of downsides is faced by crypto ecosystem stakeholders, such as trust, cybersecurity risk, crimes, price volatility, scalability, pseudonymity nature of the cryptocurrency, blockchain, scalability, and other sociotechnical issues (Shin et al., 2022). While these concerns continue to trigger further debates and action in the crypto space, Nakamoto and other cryptocurrency creators are leaning more towards financial performance at the expense of other actors in the cryptocurrency ecosystem and other societal benefits (Tashman et al., 2013; Argandona, 2012).

Hence, little effort has been given to in-depth contextual considerations of the social, ethical, environmental, and legal aspects related to cryptocurrency stakeholders in the value creation process in the crypto ecosystem (Tashman et al., 2013; Argandona, 2012). Consequently, making it difficult to identify who and what is really important in the cryptocurrency eco-space (Abdat et al.2019). As such, Argandona (2012), suggested, the common good theory which is the set of virtues, knowledge, capabilities and other intrinsic values that are generated voluntary or otherwise by stakeholders within the cryptocurrency ecosystem should be the possible foundation of what is good in the cryptocurrency ecosystem stakeholder's theory.

1.2. Research Article Motivation, Related work and contribution

In the author's examination of this research topic, he found that, despite the existence, popularity, wider acceptance, and adoption of cryptocurrency over the years, limited studies exist on Stakeholder Salience in the cryptocurrency ecosystem using the stakeholder salient model. Almost no study has been done on the cryptocurrency ecosystem from the stakeholder salience model perspective. Only Baytas et al.(2022) study on the NFT ecosystem came closed, but their

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study focused on the NFT system stakeholder value. This article seeks to fill this gap in the literature and contribute to the body of knowledge on the cryptocurrency ecosystem. Hence, the primary objective of this research is to fill this gap by exploring stakeholder salience in the cryptocurrency ecosystem through literature reviews and Venn diagram analysis.

This research contributes to the existing body of knowledge by providing an explorative analysis of current literature on cryptocurrency ecosystem, stakeholders salient model, cryptocurrency stakeholders identification and the cryptocurrency ecosystem salient stakeholders and their significance in the value creation process in the cryptocurrency ecosystem. Understanding these dynamics helps scholars, policymakers, governments, , and other stakeholders in determining who and what really matter in the crypto ecospace.

The core research question that this study seeks to addresses is ***who are current stakeholders in the cryptocurrency ecosystem and what are their salience?***

In order to answer this question, the author analyses what constitutes a stakeholder theory, the salience model. The author then applies relevant stakeholders within the crypto space to the stakeholder salient model, taking into consideration their influence and dependence on the cryptocurrency ecosystem. Within the analysis and application approach, the author explores who the relevant actors are and to what extent crypto creators, developers, and exchange platforms align different stakeholder needs and requirements in the overall value-creation process within the cryptocurrency ecosystem.

1.3. Research Paper Structure

The research paper starts with an introduction section, followed by a literature review that includes an appraisal of the concept of stakeholder theory, stakeholder salient model, stakeholder identification, cryptocurrency overview, and cryptocurrency ecosystem. With the literature review, the author frames the scope of the analysis and applies it in a subsequent section on the cryptocurrency ecosystem. The author identified relevant stakeholders in the crypto space and then applied the stakeholder salient model using the Venn diagram in the methodology section. This section follows the results and analysis section and the discussion of findings and a conclusion section that examines findings in results and analysis section.

2. Literature and Conceptual Review

The main concepts in this study are briefly examined in this section as shown below:

2.1. Stakeholder Theory

Stakeholder theory draws into several social sciences, namely, corporate social responsibility, economics, sociology, organizational studies, system theory, politics, ethics and corporate plannings which makes it difficult for stakeholder theorists view on the identification and definition of a firm stakeholders from a broader or narrow perspective (Mainardes et al.2012; Mitchell et al., 1997; Abdat et al., 2019). Stakeholder theory model analysis has increased

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significantly over the years. Partly because it emphasizes explaining and predicting how a firm function vis-à-vis its relationships and influence in its operational ecosystem (Rowley, 1997). Numerous scholars have helped to develop the stakeholder theory but Freeman (1984) new way of thinking about a business organization operational ecosystem stand out amongst them when compared to other researcher results on the stakeholder theory. Freeman (1984) research findings explain the relations between a firm itself and its external operational ecosystem and also the relationship between the behaviours of the firm and its operational ecosystem that provide the best insight on stakeholder theory model analysis.

Nnadi et al. (2023), in their qualitative study on the moderating effect of corporate sustainability attributes of products on the financial performance of a firm describes stakeholder theory as how a firm manages stakeholder interest within the organization's ecosystem by looking at stakeholders that affect the firm operational activities and impact the organization's business objective. And their research findings depicts that a firm ability to fulfil the demands and expectations of the various stakeholders in its activities determines if the business will be successful or not in the pursuit of it business objective (Nnadi et al.,2023).On the other hand, Kapiriri et al. (2021) argues that stakeholder theory is a capitalist opinion that stresses the interconnected relationships between all entities with legitimate interests in an organization. Linking Nnadi et al. (2023) and Kapiriri et al. (2021) studies on stakeholder theory model, one will state that a business organization should create benefits without prima facie prioritization of one interest group's benefit over another to attain its business objectives and goals. Relating this to the cryptocurrency ecosystem, value creation should be for all stakeholders, not only shareholders or developers of cryptocurrency (Kapiriri et al.,2021).

According to Mitchell et al. (1997), stakeholder theorist like Freeman (1984), Jones (1980) and Clarkson (1998) recognized earlier there is going to be difference on opinion about the broad and narrow view on the definition and identification of stakeholders in any organization ecosystem. As put forward by Abdat et al. (2019) stakeholder's theorist view, believed that the identification of stakeholders in any ecosystem depends to a large extent on the definition of a firm stakeholder in their ecosystem. As such, Freeman (1984), research titled Strategic Management argues that a firm stakeholder can be any organization, government entities, individual, or a group of individuals that can be affected by a business organization activity. In that note, Freeman (1984) goes on to defines stakeholder as any government's entity, organizations, group or individual who can affect or is affected by the attainment of an organization business objectives. Freeman definition of stakeholder is considered one of the broadest definitions of stakeholders. In contrast, as stated in Mitchell et al. (1997), Clarkson offered one of the narrowest definitions in literatures of stakeholders and defines them as a voluntary or non-voluntary risk bearers. However, Mitchell et al.(1997) in their study "towards a theory of stakeholder identification and salience" claims that stakeholder theory in Freeman and Clarkson days lacked a vigorous model of stakeholder's identification and prioritization. According to Tashman et al. (2013), at that time, Mitchell and colleagues observes that stakeholder had generally been classified as either claimants or influencers based off on Freeman (1984) original broader definition of a firm stakeholder. Mitchell and colleagues, the proponents of the stakeholder salient model believed

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that a stakeholder could be both a claimants and influencers concurrently because firms and stakeholders are often inter-reliant (Tashman et al., 2013).

2.2. Stakeholder Salient Model

Michael et al. (1997) created the stakeholder salience model to help C-suite executives and board members manage organizations' stakeholder interaction. They define stakeholder salience as the degree to which a firm leader gives priority to competing stakeholder claims within their operational ecosystem by ranking and evaluating all stakeholders based on their attributes and importance to the firm value creation process (Michael et al.,1997). Thus, the stakeholder salient model is based on the premise that C-suite executive and board of directors must understand that the firm value is created is relationship with broad variety of stakeholders within its ecosystem (Kujala et al., 2019).

According to the model, stakeholders' importance is dependent on three attributes, power, legitimacy, and urgency (Myllykangas et al., 2010). Power is a relationship wherein one social actor can influence the actions of another social actor to do something they otherwise would not do that is the ability of a stakeholder in an organization ecosystem to influence the operational performance activities and outcomes of an organization despite resistance (Tashman et al., 2013; Mitchell et al., 1997; Mainardes et al., 2012). Thus, a stakeholder in a firm ecosystem has power, to the extent it can gain access to coercive, utilitarian, or normative means, to impose their will in the attainment of the organization objective (Mitchell et al., 1997). Kujala et al. (2019), defines legitimacy as a generalized perception that the actions of the firm are appropriate and desirable within a socially constructed belief, values and norm. In order words, legitimacy is the legal or moral kind of relationship between someone who is interested in the firm in good faith in line with social norms and the firm (Kujala et al., 2019; Mitchell et al., 1997). Urgency on the other hand, is the degree to which a firm stakeholder in its ecosystem requires immediate attention either due to time sensitivity or the critical nature of the stakeholder claim on the firm (Mitchell et al., 1997; Khurram et al., 2019). As explained by Khurram et al. (2019), time sensitivity relates to the degree to which a delay in attending to the stakeholder claims is deem unacceptable to the particular group of stakeholders, whiles the critical nature of their claims refers to the significance a stakeholder assigned to their claim on the firm.

Mitchell et al. (1997) stakeholder salient model is thus a strategic tool for segmenting stakeholders by ranking and evaluating them based on three attributes namely, power, legitimacy and urgency. According to Tashman et al. (2013), stakeholder salient model draws on the stakeholder-agency- theory which contends that a business organization is an interconnection between C-suites executives and stakeholders in their ecosystem. Hence, C-suites executives are responsible for creating optimized value not only for owners or shareholders with profit maximization focus but all stakeholders their ecosystem. Therefore, Mitchell et al. (1997) stakeholder salient model can be used by any business organization for identification and prioritization in a form of salience of all stakeholders in their ecosystem who have claims in the organization value creation process and the attainment of their business objective.

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2.3. Stakeholder Identification

Stakeholder identification requires recognizing which stakeholders require more attention and priority in the organization value creation process (Raha et al., 2021). Traditionally, the value creation process begins by identifying the stakeholder group who can collaborate with each other and the organization to contrast their interest and capabilities with the organization specific resources for joint value creation and the attainment of their business objectives (Raha et al., 2021). Raha et al. (2021) states that Mitchell and colleagues provided the original stakeholders identification typology in which stakeholders are classified into eight groups in combination of the three salient model attributes namely power, legitimacy and urgency. Mitchell et al.(1997) stakeholder salience model elucidated that C-suite executives will identify as stakeholders the combination of stakeholders that influence firms' objectives know as power, the validity of stakeholder claims on the firm be it legal, moral, financial know as legitimacy and the level of time sensitivity of their claims know as urgency (Raha et al., 2021; Khurram et al., 2019; Tashman et al., 2013). Notwithstanding, stakeholder theorist believers that the identification stakeholder in any ecosystem needs the application of both the descriptive theory of Mitchell et al.(1997) and the normative theory for effective identification of an organization stakeholders in their ecosystem (Mitchell et al.,1997). The stakeholder salient model explains when C-Suite executives consider someone as a stakeholder in their ecosystem and the normative theory to decide who should be a stakeholder (Mitchell et al.,1997). Hence, the norm on who or what really counts in a firm operational ecosystem rest upon the premise that C-suites executive pay unique attention to the various stakeholder classes that they perceived to indicate stakeholder salience and then be identified based on the possession, or attributed possession on one, two or all three of the attributes: power, legitimacy and urgency (Mitchell et al., 1997; Khurram et al., 2019).

As stated in Myllykangas et al. (2010), Khurram et al. (2019) and Mitchell et al. (1997) stakeholder Salient model is based on power, Urgency, and legitimacy attributes, and stakeholders are categorized as latent, expectant, and definitive stakeholders. A stakeholder in considered latent in a firm who holds only one of the essential stakeholder attributes, power, legitimacy, and Urgency, probably receiving little attention from the firm C-suites executive in their decision making thus, a low salience because they one possesses only one attributes (Mainards et al., 2013; Mitchell et al., 1997). An expectant stakeholder is in possession of a combination of two major stakeholder attributes resulting in a more active posture both from stakeholders and the firm. Expectant stakeholders are usually more active in the firm operational ecosystem than latent stakeholders and most often have an agenda they are promoting such as values or regulations they want the firm to embrace or follow (Mainards et al., 2013; Mitchell et al., 1997). Definitive stakeholders on the other hand occurs whenever a stakeholder holds power, legitimacy and urgency within the firm operational ecosystem thus, requiring immediately attention and prioritization from C-suites executives and regarded as high salience in the ecosystem (Mainards et al., 2013; Mitchell et al., 1997).

As illustrated in figure 1, Mitchell et al. (1997), posits that eight (8) additional types of stakeholders emerge from the combination of the three stakeholder attributes (power, legitimacy

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and urgency) and each category (latent, expectant, and definitive) as explained above. The eight (8) stakeholder types are dormant, discretionary, demanding, dominant, dangerous, dependent definitive and non-stakeholder (Yu et al., 2011; Mitchell et al., 1997). Dormant stakeholder group or individuals possess the power attributes to impose their will on the firm but do not have a legitimate relationship or an urgent claim on the firm thus, their power falls into disuse with no ongoing interaction with the firm (Yu et al., 2011; Mitchell et al., 1997; Mainards et al., 2013). Discretional stakeholders possess the attribute of legitimacy, but no power or urgency claims on the firm (Yu et al., 2011; Mitchell et al., 1997; Mainards et al., 2013). With a discretional stakeholder, C-suites managers satisfy their expectation based solely on shared values under the framework of corporate social responsibility (Yu et al., 2011; Mitchell et al., 1997). Demanding stakeholders only have urgency claim on the firm and lack the power and legitimate attributes. Though they do not demand more from the firm, demanding stakeholders must be monitor for possible gain of additional attributes (power or legitimacy) (Yu et al., 2011; Mainards et al., 2013). Discretional, dormant and demanding stakeholder types are linked to the latent stakeholders' categories that they pose only one attributes therefore they have low salient in the ecosystem (Yu et al., 2011; Mitchell et al., 1997).

The dominant stakeholder group and individual hold influence of the firm guaranteed by power and legitimacy. Hence their input is vital in the operations of the firm because the combination of power and legitimacy enables them to form a dominant coalition and attention from the firm (Yu et al., 2011; Mainards et al., 2013). Dangerous stakeholder types hold power and urgent claims in the operational ecosystem of the firm but no legitimacy. The dangerous stakeholders are assumed to be violent and present high risk to firm operations and other stakeholders in the ecosystem (Yu et al., 2011; Mainards et al., 2013). Dependent stakeholders lack power attributes but have both legitimate and urgent claim on the firm operations and depends on other stakeholder for power to enforce their claims on the firm (Yu et al., 2011; Mitchell et al., 1997). Dominant, dangerous and dependent stakeholder types are linked to the expectant stakeholders' categories as they possess two attributes therefore, they have medium salient in the firm operational ecosystem (Yu et al., 2011; Mitchell et al., 1997). A definitive stakeholder group or individuals holds all three of the attributes power, legitimacy and urgency claims on the firm's operations. Therefore, C-suites executive must pay immediate attention priority to all definitive stakeholder of the firm. Definitive stakeholders have the highest salience in the firm ecosystem (Yu et al., 2011; Mitchell et al., 1997). Finally, the non-stakeholder group or individuals hold no influence and are not influence by the firm's operations (Yu et al., 2011; Mitchell et al., 1997).

Stakeholders' attributes can increase from latent to expectant to definitive stakeholders. A powerless stakeholder may become powerful, and an illegitimate stakeholder may become a legitimate one (Yu et al., 2011; Mitchell et al., 1997). Hence, C-suite executives should never forget that stakeholders increase in salience, requiring different degrees and types of attention to stakeholder claims depending on their attributed possession of power, legitimacy, and Urgency. These levels of attributes can vary from issue to issue and from time to time in any business operational ecosystem (Mitchell et al., 1997).

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2.4. Cryptocurrency

Satoshi Nakamoto cryptocurrencies is rapidly transform the global financial market and also decentralizing interactions between policymakers, regulators and other actors in the crypto ecosystem (Shin et al., 2022; Spenkelink, 2014; Sarkintudu et al., 2019). With a market capitalization as of October 31, 2024, of US$ 2.6 trillion, cryptocurrencies are currently being accepted and adopted as legal tender by governments and widely accepted by global brands as a medium of exchange and investments assets (Shine et al., 2022; Statista, 2024). Cryptocurrency digital currency is supported by cryptographic systems that enable secure online payments of goods, services, and investment without the use of third-party intermediaries or government control (Spenkelink, 2014; Milutinovic, 2018; Zohuri et al., 2022). Hence representing a paradigm shift in the traditional financial system landscape offering an alternative to existing traditional commercial banks, fintech products and fiat currency(Crptonite, 2024).

Cryptocurrencies digital currency are naturally digital money, commodities, and investments assets designed to be used on the online blockchain technology (Shin et al., 200; Zohuri et al., 2022). Cryptocurrencies, by their nature, are managed by peer-to-peer networks of open-source software with the aid of cryptocurrency miners (Milutinovic, 2018; Zohuri et al., 2022). Cryptocurrencies are not controlled by any government, nor do they rely on a nation's central banks or traditional commercial banks for their functionality only, with the exception of countries that have adopted cryptocurrency as legal tender (Nakamoto, 2009; Milutinovic, 2018; Zohuri et al., 2022). Bitcoin, the first cryptocurrency launched more than a decade ago, remains by far the biggest, the most influential, and best-known crypto in terms of market capitalization and volume, followed by other well-known crypto such as Ethereum, Tether, Solana, Tezos, EOS, and ZCash (Milutinovic, 2018; Zohuri et al., 2022).

According to Abdat et al. (2019), the validity of cryptocurrency is provided by a blockchain technology that vetted all cryptocurrency transactions for accuracy and completeness; thus, blockchain is the technology behind cryptocurrencies' existence, functionality, and operation. Blockchain technology is an open distributed ledger that can record transactions and secure data between two parties efficiently and in a verifiable and permanent way in a peer-to-peer network (Abdat et al., 2019; Zohuri et al., 2022). By design, blockchain technology is intrinsically resistant to modifying the data stored in its ledger (Zohuri et al., 2022). As explained by Zohuri et al.(2022), blockchains are secure by design. They are an example of a distributed computing system with high complex fault tolerance containing a permanent, incorruptible record of all transactions and effectively makes traditional commercial banks and other financial institutions clearing houses and escrow redundant. One key characteristic of blockchain technology is its distributed database that is updated swiftly when transactions occur through a proof work mechanism by crypto miners (Shin et al., 2022; Abdat et al., 2019).

2.5. Cryptocurrency Ecosystem

The surging popularity and real word utility of cryptocurrency especially amongst the Gen Z and Millennial demographics have drawn global attention as a substitute currency, investment

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platform and payment system (Sarkintudu et al., 2019; WazirX, 2023). Accordingly, cryptocurrency have seen an ever-increasing number of individuals, group of individuals, firm and government eager daily to hop on the crypto bandwagon and explore the various opportunities within this emerging digital currency class (WazirX, 2023). Therefore, gaining a profound understanding of the cryptocurrency ecosystem and its foundational component becomes crucial in today ever evolving financial markets (WazirX, 2023; Mainards et al., 2013; Mitchell et al., 1997).

According to Cassey et al. (2024), it is undeniable that ecosystems are emerging as a powerful avenue for achieving success for stakeholders in any spere of business operations be it crypto, central bank digital currency or fintech space. Thus, embracing a business operational ecosystem is a powerful way to stay competitive, relevant and resilient in a dynamic business environment. In that light, Sarkintudu et al.(2019) and Sarafin (2021) defines an ecosystem as a network of firms and individuals' stakeholder that interacts with each other around a closed system with each member working in harmony to keep the ecosystem stable in a bid to optimize the collective benefit of the system. Whiles Casey et al. (2024) describes a business ecosystem as a collaborative networks of business organization's that collectively create and share value.

Cryptocurrency ecosystem otherwise known as crypto space is referred to by Cryptonite (2024) and WazirX (2023) as a dynamic, rapidly and interrelated network encompassing a broad range of components and technologies. On the other hand, Sarkintudu et al. (2019), believes that cryptocurrency ecosystem is a technological ecosystem that involve the interactions of windows, IOS, other software's, firms, governments, investors and private individuals for common purpose to perform financial transactions over the internet. The cryptocurrency ecosystem compromises several key components label as orchestrator and participant that work in tandem to facilitate the creation of crypto, flow of capital, transfers, manage risk and provision of financial services and management of the cryptocurrency digital currency (Crptonite, 2024; Casey et al., 2024; WazirX,2023). The components of the cryptocurrency ecosystem include cryptocurrency creators, blockchain technology developers, market makers, crypto exchanges, miners and validators, starts up and investors, governments policy makers and regulators and the general public (Crptonite, 2024; WazirX,2023).

2.5.1 Cryptocurrency creators

Cryptocurrency creators are at the heart of the cryptocurrency ecosystem and are also known as the orchestrators of the crypto space. Without cryptocurrency creators, there is no cryptocurrency ecosystem. , there would be no crypto space. They form the basis for the various pseudo-anonymous cryptocurrency digital currencies that utilize cryptography for security in the ecosystem (Crptonite, 2024). As stated by Casey et al. (2024), cryptocurrency creators, also called cryptocurrency inventors, build the offerings and services emerging from the crypto ecosystem, and they benefit from the collective value of the ecosystems. The prominent cryptocurrency creators are Bitcoin creator Satoshi Nakamoto, Vitalik Buterin, who created Ethereum, Charles Lee, the creator of Litecoin; Tether Limited, who created the USDT

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cryptocurrency Binance was developed by Changpeng Zhao (Belov, 2020; World crypto, 2025; Bayena, 2025).

2.5.2 Blockchain developers

Blockchain developers are also known as the orchestrators of the crypto space. Block developers form a critical component of the crypto ecosystem, contributing to its underlying infrastructure (Casey et al., 2024; WazirX,2023). WazirX,2023 divided blockchain developers into two significant types, namely, core blockchain developers and blockchain software developers. Core blockchain developers are responsible for crafting the architecture and security measures of the blockchain system, and their role lays the foundational framework for the operation of the crypto space. In contrast, blockchain software developers build applications on the blockchain architecture and protocol crafted by Core blockchain developers (WazirX,2023). The most prolific blockchain developer is the unknown founder of cryptocurrency and Bitcoin creator Satoshi Nakamoto (Bayena, 2025).

2.5.3 Cryptocurrency Market Makers

Cryptocurrency market makers are investment firms that help create liquidity in the cryptocurrency ecosystem (Liem et al., 2025; Borden, 2024). Crypto market markers are essential liquidity providers in cryptocurrency markets, facilitating efficient trading by continuously maintaining buy and sell orders (Liem et al., 2025; Borden, 2024). Crypto market makers, also known as cryptocurrency Venture capitalists, provide liquidity in the crypto space by simultaneously buying and selling assets (Karimi et al., 2023). According to Zero Cap (2023), crypto market makers are vital to the cryptocurrency ecosystem as they enable institutional and retail investors to buy and sell crypto assets with zero or minimal price impact on their investment portfolio, which is important for the overall health of the crypt ecosystem. Given the high volatility and relatively low liquidity in the crypto ecosystem, crypto market makers help to reduce price volatility by improving price discovery and enhancing the crypto investment space efficiency(Zerocap,2023). Hence, cryptocurrency trading would be significantly less efficient without market makers, requiring direct buyer-seller matches at exact price points, which will be very unlikely given the nature of the cryptocurrency ecosystem (Liem et al., 2025; Borden, 2024). Cryptocurrency market makers include proprietary trading firms, hedge funds, and individual traders such as Wintermute, Cumberland, and B2C2(Liem et al., 2025).

2.5.4 Cryptocurrency Exchanges

Crypto exchanges are business platforms that act as intermediaries to facilitate the buying, selling of cryptocurrencies (Cryptonite, 2024; Das, 2024; WazirX,2023). Cryptocurrencies exchanges are regarded as the backbone of the crypto digital finance ecosystem as they enable quick and easy crypto transactions between market participants in the ecosystem, thus serving as an indispensable function within the crypto space (Cryptonite, 2024; Das, 2024; WazirX,2023). According to Cryptonite (2024), crypto exchange platforms can be either centralized, where a third party manages transactions, or decentralized, where transactions occur directly between market participants in the ecosystem through intelligent contracts. Binance crypto exchange,

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with a trading volume of US$ 39.5 billion, is considered the largest crypto exchange in the world, followed by Coinbase exchange, Bybit, OKX, and Upbit crypto exchanges (Coinmarketcap, 2024).

2.5.5 Miners and validators

Miners and Validators in the Cryptocurrency ecosystem operate on two central consensus mechanisms, namely, Proof of Work (POW) and Proof of Stake (POS) (Cooper, 2024; Cryptonite, 2024; WazirX,2023). These miners used hardware and software to generate a cryptographic number to confirm transactions and add new blocks to the blockchain software to earn some cryptocurrencies in exchange for payment for service render (Cryptonite, 2024). Thus, in proof of work, miners utilized computational power to secure the blockchain network and process transactions (Cryptonite, 2024; WazirX,2023). Notable global cryptocurrencies such as Bitcoin, Ethereum, Dogecoin, and Litecoin rely heavily on miners' proof of work. On the other hand, proof of stake acts as a blockchain transaction validator, ensuring the authenticity of new transactions integrated into the crypto blockchain network (Cryptonite, 2024; WazirX,2023). In effect, both POW and POS are regarded as employees of blockchain technology.

2.5.6 Investors

Cryptocurrency ecosystem houses both institutional and retail investors (WazirX,2023). Institutional investors see value in the ability to diversification, as well as the potential for asymmetric returns when making investment decisions (Huang et al., 2022; Elinson et al., 2023). Therefore, there is a surge of institutional investors from hedge funds, insurance companies, foundations and other global brands that are investing significantly in cryptocurrency digital assets (Huang et al., 2022; Elinson et al., 2023).Retail Investors make up the core of the investor in the crypto space primarily for capital gains and their decision and action impacts the volatility of cryptocurrency spot prices in the crypto ecosystem(WazirX,2023).

2.5.7 Governments (policy makers and regulators)

Governments are among the most important orchestrators in the crypto space. The government is responsible for safeguarding its citizens' property and contributing to society's growth and development (Adrian et al., 2023). Thus, to protect national sovereignty and defend against the effect of crypto on a country's economy, the government (Policymakers and regulators) makes an integral component of the crypto ecosystem as future regulators (Adrian et al., 2023).

2.5.8 Ordinary Citizen

Cryptocurrency decentralization comes along with lot of ethical issues in the ecosystem thus, a market bubble in the financial system just like Eron, World dotcom and Bernie Madoff would have a negative implication form ordinary citizen.

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3. Methodology and Analysis

This research aimed to analyze and apply the stakeholder salience model to the cryptocurrency ecosystem to determine the most salient stakeholder in the cryptocurrency ecosystem. To accomplish this, the study exploits hybrid research methodology solely based on an in-depth qualitative literature review and Venn diagram to answer the research question "Who are the current stakeholders in the cryptocurrency ecosystem, and what are their salience using the stakeholder salient model"? The literature review explored existing literature on stakeholder theory, the stakeholder salience model, cryptocurrency, and the cryptocurrency ecosystem. The Venn diagram (Figures 1-3)was utilized to identify the cryptocurrency stakeholders' roles and influences in the ecosystem, using the stakeholder salient model to determine the most salient stakeholders in the cryptocurrency ecosystem. This involves eight stages based on the identified stakeholders' roles, influences, and priorities when aligned with the three attributes: power, legitimacy, and urgency.

Much of the study was designed around a comprehensive literature review and synthesis, which includes acquiring literature for this study from a wide range of academic and professional sources, processing that information, and drawing conclusions from those conclusions. This research intends to fill in the gaps in our knowledge of stakeholder salience in the cryptocurrency ecosystem. The following steps constitute data collection - Google Scholar, Google, Research Gate, and Academic Search Premier using terms like cryptocurrency, cryptocurrency ecosystem, cryptocurrency stakeholders, stakeholder salient model, stakeholder theory, blockchain developers, and cryptocurrency exchanges. Papers presented at conferences, reports from cryptocurrency exchanges and other business sectors, and government records were all searched. The selection criteria were the source's trustworthiness, timeliness, and relevance to the research question. Academic scholarly literature and professional papers were analyzed using induction and deduction scientific research methods of analysis and synthesis, abstraction, and generalization methods. Scholarly articles, business sector publications from cryptocurrency ecosystem experts, and the work of established government authorities were accorded the most weight.

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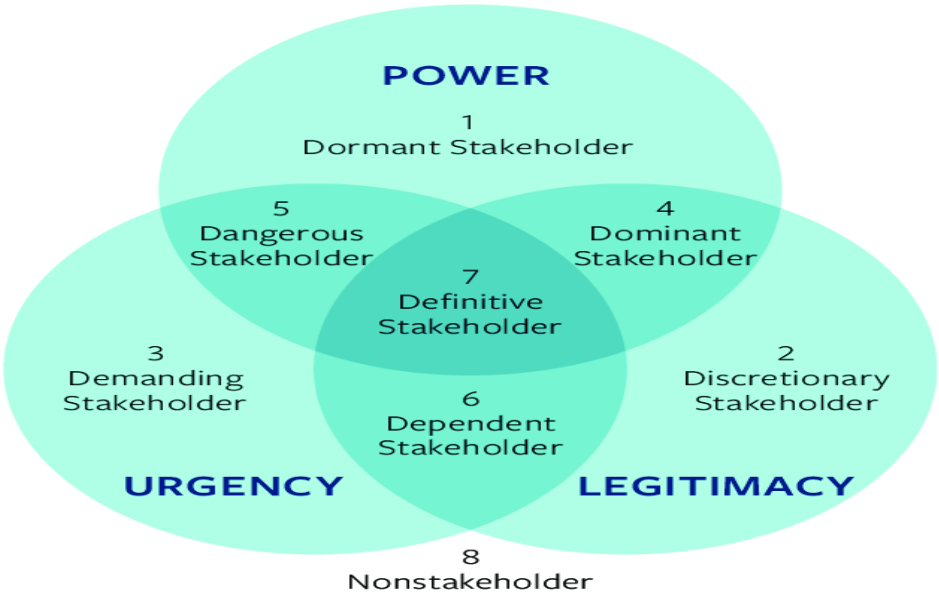
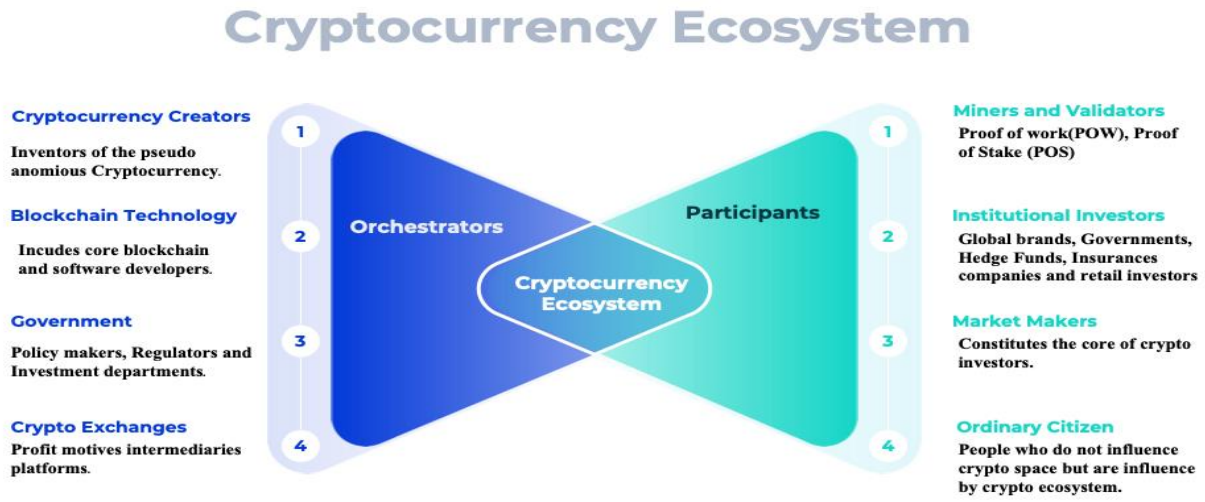
3.1 Venn diagram (Figures 1-3)

Figure 1: The stakeholder salience model



Sources: (Mitchell et al. 1997, p. 874)

Figure 2: Cryptocurrency Ecosystem



Sources: David Hope Kanu-research author.

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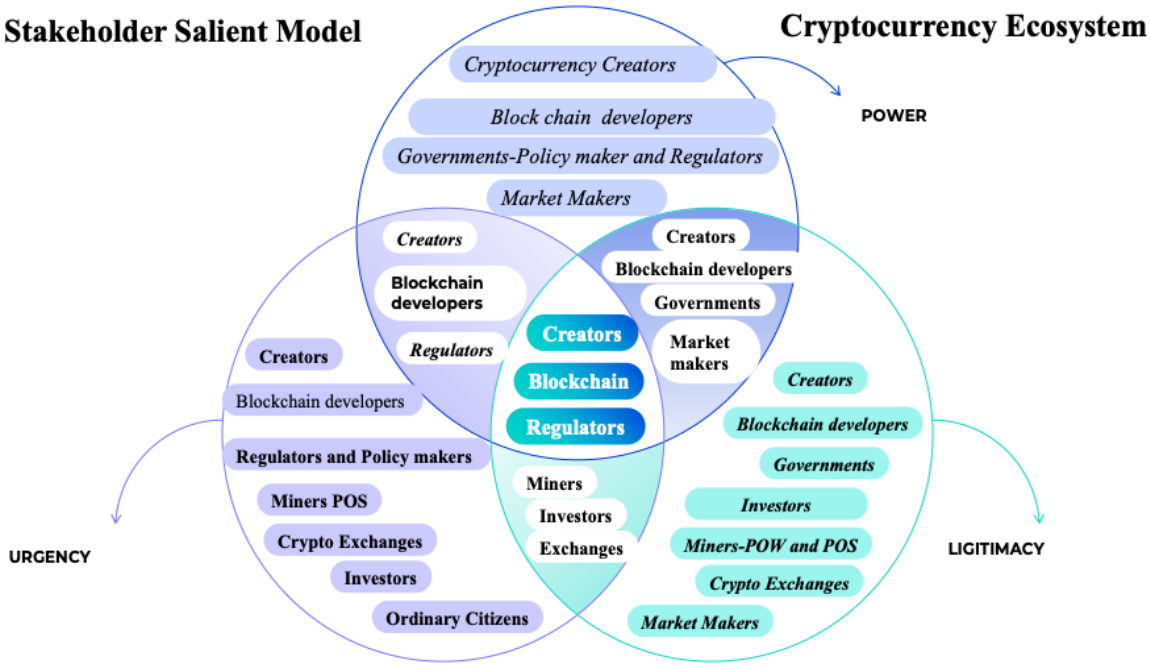

Sources: David Hope Kanu-research author.

4. Results and Analysis

4.1 Stakeholders Salience in Cryptocurrency Ecosystem

This research paper argues that for the business organization to create value and attain its business objectives, the board of directors and C-suite executives must identify, prioritize, and manage relationships with all stakeholders in their operational ecosystem (Kujala et al., 2019). That light, Raha et al. (2021) reiterated that managing stakeholder's relationships in a firm ecosystem demands recognizing which stakeholders within the ecosystem require more priority and attention in the value-creation process. In essence, according to Raha et al. (2021) Kujala et al. (2019) the value creation process begins when a business organization has an in-depth understanding of the actors in their operational ecosystem, then identifies those stakeholders that are connected by a set of attributes with each other and the firm to contrast their influence and the firm-specific resources for joint value creation.

Cryptocurrency digital currencies are now part of the global payments system and the wider social realities and so their design, developments, distributed ledgers, business motives should be based on value creation for all stakeholders and not only crypto creators, blockchain developers and market makers but for the common good of all stakeholders in the cryptocurrency ecosystem (Freeman, 2013; Shin et al., 2022). Stakeholder theory stresses the interconnected relationships between a cryptocurrency, blockchain miners, investors, external auditors, governments (regulators, policy makers and revenue authorities), and others who have a stake in cryptocurrency ecosystem. The theory argues that a firm should create value for all stakeholders, not just one stakeholder (Mitchell et al., 1997).

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In the Venn diagram data (Figure 1), reference was made to identified 8 salient stakeholders in the cryptocurrency ecosystem, namely, cryptocurrency creators, blockchain technology, government, crypto exchanges, miners and validators, institutional investors, retail investors, and ordinary citizens. The categorization is primarily based on the analysis and application of Mitchell et al.(1997) stakeholder salient model (figure 1) to the cryptocurrency ecosystem (figure 2) to answer the study research question (Figure 3). Below is a detailed explanation of the outcome of the Venn diagram (Figure 3) -analysis and application of stakeholder salient in the cryptocurrency ecosystem.

4.2. Definitive Stakeholder in the Crypto Ecosystem

Definitive stakeholders have the highest impact in any operating ecosystem because they possess powerful, legitimate, and urgent claims on the ecosystem and are considered the most salient stakeholders (Mitchell et al., 1997). Cryptocurrency creators, blockchain technology, and government were identified as the most salient stakeholder classes in the cryptocurrency ecosystem (Figure 3).

Cryptocurrency creators- are perceived to be the most salient stakeholder in cryptocurrency ecosystem because without Nakamoto, Charlie Lee and other crypto creators, there will be no cryptocurrency digital currency and hence no cryptocurrency ecosystems. Crypto creators develop the cryptocurrency digital currency based on the concept of cryptography thus, their influence on the ecosystem is without doubt the highest salient in the cryptocurrency ecosystem (Abdat et al., 2019).

Block Chain developers- Blockchain developers are responsible for the development of the underlying block chain architect and the software powering the decentralized cryptocurrency. Blockchain developers forms a critical component of the crypto ecosystem as their distributed and immutable ledgers make possible the recording of transaction and security of the peer-to-peer network. Hence, blockchain developers possess (Cooper, 2022). Hence, as illustrated in figure 3 blockchain developer are one of the most salient stakeholders in the ecosystem. Blockchain developers possesses a powerful claim because, any scalability, change management and inadequate security measures problems with both blockchain architect and the software will make the ecosystem prone to hackers, loss of cryptocurrency records and transactions and system failure which will definitely have implication for global financial system and a corresponding negative implication for financial stability in most countries. Blockchain developers have legitimate claims in the crypto ecosystem as it hosts all records of transactions within the crypto space and finally, blockchain developers has time sensitive and critical claim on the cryptocurrency ecosystem as their functionality have significant implication crypto ecosystem as a whole which ensure their urgency claims on the ecosystem.

Government- decentralized self-regulated cryptocurrency operates without no government backing. Government as the protector of national sovereignty, future regulators of the cryptocurrency and current policy maker for all stakeholders in the cryptocurrency ecosystem are considered one of the most salient stakeholders third to the cryptocurrency creators and

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developers in the crypto space. Thus, government are considered a definitive stakeholder in the cryptocurrency ecosystem. Government as policy maker and regulators has power claims on the crypto space to both directly and indirectly influence the operational activities of the cryptocurrency ecosystem by exercising their sovereignty power over the crypto space through tax policy and regulations to govern players in the crypto ecosystem. For instance, in the US, the Security Exchange Commission (SEC) regulate and monitor all initial coin offering used by crypto project to raise capital (WazirX, 2023). Moreover, to enhance the financial integrity of the cryptocurrency ecosystem given the uphill of crypto related crimes countries worldwide are now coming together to facilitate a global regulation for the crypto space. Government has legitimate legal, moral and financial claims on the crypto space based on the functionality of national government, social norms and belief. In effect, government ensure that cryptocurrency actors align with societal norm and ethical practices for the common good of the country as a whole (Argandona, 2012). According to Adrian et al. (2023), government as tax collector and revenue agent for the public has an urgent claim on the cryptocurrency ecosystem. Global tax authorities have developed and are developing tax policies for the treatment of cryptocurrency, including value-added taxes and levies on crypto investors, miners and market makers income generated from the crypto space.

4.3 Dependent Stakeholders in the Cryptocurrency Ecosystem

Dependent stakeholders also known as expectant stakeholder are low in power but have high legitimacy and high urgency (Mitchell et al., 1997). Dependent stakeholders have legitimate and urgent claims on the crypto space but lack power to enforce their influence in the cryptocurrency ecosystem. They most often depend on stakeholders to provide the power they need to execute their claims. Miners, Cryptocurrency exchanges and investors are considered dependent stakeholder in the cryptocurrency ecosystem.

Miners- are considered validators and confirming entity in the cryptocurrency ecosystem. Cryptocurrency ecosystem operates on the Proof of Work (POW) or a Proof of Stake (POS)consensus that plays a pivotal role in processing crypto transactions on the blockchain and securing the peer-peer network. Thus, Miners as illustrated in figure 3 are considered dependent stakeholders in the crypto space. Miners act interchangeably as cryptocurrency employees and investors, which gives them legitimate financial and contract-based claims on the crypto ecosystem. Miners promptly validate cryptocurrency transactions to avoid wallet double-spending, and also revenue generated from the crypto space in exchange for their services as employees of the ecosystem which provides them with urgency claims (Reaume, 2021).

Crypto Exchanges- According to Das (2024), crypto exchanges have become a core actor in the crypto space connecting millions crypto trades to quickly and easily facilitate investment and payment transactions from around the world. Crypto exchange platforms set preference price and offer liquidity to facilitates trading, purchase and sales of cryptocurrencies in the crypto ecosystem (Abdat et al., 2019). Thus, Crypto exchanges as shown in figure 3 are dependent stakeholders. Crypto exchanges by connecting million crypto traders for investment and payment purpose around the globe give them legitimate financial, legal and contract-based claims on the

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cryptocurrency ecosystem. Crypto exchanges urgent claims are seen through their shareholders or owners' expectation for swift returns on their investments in the exchange platforms.

Investors- This category of stakeholders in the crypto ecosystem consist of institutional and retail investors are most often referred to as traders in the crypto space. As stated in Elinson et al. (2023), crypto institutional investors see value in the ability to diversity assets, as well as the potential for asymmetric returns when investing in crypto assets and mostly focus on spot cryptocurrencies assets whiles retail investors who constitute a significant portion of the crypto community are regards as speculators because they engage in the crypto space for personal gains (BIS, 2023). Rising crypto prices attracts retail investors into the crypto space with an expectation of quick and large capital gains (BIS, 2023). Thus, crypto investors are considered dependent stakeholders with legitimacy and urgent claims on the ecosystem. Crypto investors through their investment in the crypto space have legitimate financial and legal claims on the crypto ecosystem. Crypto price volatility poses a significant risk to investors (BIS, 2023). Therefore, volatility of capital flow in the crypto community gives investors an urgent claim in the crypto ecosystem.

4.4 Dominant Stakeholders in the Cryptocurrency Ecosystem

Dominant Stakeholders have two prominent attributes power and legitimacy but whose need are not urgent. Dominant stakeholders have high power, high legitimacy but low urgency and they are guaranteed influence within the ecosystems through dominant coalition. Cryptocurrency market marker have dominant claims in the cryptocurrency ecosystem (Figure 3).

Crypto Market Makers – are very important stakeholders for the effective functioning and growth of the cryptocurrency ecosystem, thus are regarded as dominant stakeholder in the crypt space. Crypto Market makers, by enhancing price stability, market efficiency and supports the decentralized nature of the cryptocurrency ecosystem makes them have a powerful claim on the cryptocurrency ecosystem because without the crypto market maker, the crypto investment climate will be very volatile, less liquid and less efficient (Zerocap, 2023). Crypto market makers, have legitimate financial and contractual claims on the crypto space by providing liquidity and supporting other stakeholders in the cryptocurrency ecosystem.

4.5 Demanding Stakeholders in the Cryptocurrency Ecosystem

Demanding stakeholders hold only urgent claims on the operational ecosystem, and they fall under the latent stakeholder type because they hold only one of the essential three stakeholder attributes in the stakeholder salient model (Mitchell et al., 1997). The ordinary citizen is believed to be the demanding stakeholder in the cryptocurrency ecosystem, as depicted in Figure 3.

Ordinary citizen-cryptocurrency, a private decentralized ecosystem with no government backing or control, is yet to be regulated. Thus, any financial crisis and stability will hurt the ordinary citizen. Therefore, the public has an urgent, time-sensitive claim on the cryptocurrency

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ecosystem, demanding that the country's government and global regulators swiftly develop regulations and supervisory control over the operations of the cryptocurrency ecosystem.

5. Discussion and Conclusion

In this research article, the author has explored the cryptocurrency ecosystem based on the stakeholder identification and salience model of Mitchell et al.(1997) and has used the Venn diagram for presentation of the outcome of the application and analysis of the model. To the authors knowledge, this is the first research on the application and analysis of stakeholder identification and salient model on the cryptocurrency ecosystem. Previous study Baytas et al.(2022) focus on NFT ecosystem.

Highlight from our findings shows that there are definitive, dominant, dependent and demanding stakeholders in the cryptocurrency ecosystem. Each category of stakeholders has implication for the value proposition of the ecosystem. Notably, there are three stakeholder group that have a direct and significant impact on the cryptocurrency operational ecosystem. The author finds cryptocurrency creator (Inventors), blockchain developers and government as definitive stakeholders with high power, high legitimacy and high urgency in the ecosystem. Crypto creators with vested interest are most definitive stakeholders in the crypto ecosystem as without their blue ocean innovation there will no cryptocurrency ecosystem. Blockchain developers enhanced the decentralization nature of the cryptocurrency that have attracts significant users who are unhappy with government control investments space in the financial system. Government as future regulators of the crypto space, policymaker and national sovereignty right have power, urgency and grant legitimacy to the cryptocurrency ecosystem. Government frames the playing field and can provide the necessary support to protects all actors in the crypto space.

Cryptocurrency creator (Inventors), blockchain developers and government as definitive stakeholders are the most salient stakeholders in the crypto ecosystem and must be the central focus in the ecosystem value proposition. Crypto creator cannot exist in isolation of the blockchain developer nor the government thus, they should regard each other as key partners within the crypto ecosystem with frequent high-level meetings, personalized communication and involve each other in critical decision making.

The other important stakeholder identified are crypto market makers who I identified as dominant stakeholder. Crypto market makers are the engine for crypto investment climates functioning and growth as they provide liquidity that stabilized prices, support the expansion of the decentralized nature of crypto investment market and improve the ecosystem efficiency. Hence as dominant stakeholders in the ecosystem, crypto market makers are essential for the success of the ecosystem, and they require integrative decision-making roles and strategic collaboration with other actors in the crypto space. Crypto market makes have the potential to move from expectant dominant stakeholders to definitive stakeholders in the near distance future as the US president elect favour the cryptocurrency space as seen in the surge in the market prices of cryptocurrency immediately after Donal Trump was declared the president elect on November 6, 2024.

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Crypto Miners, exchange platform and investors were considered dependent stakeholders. Crypto miners as employee of the ecosystem, validate and authenticate the ecosystem which gives dependent status in the crypto ecosystem. Whiles crypto exchange platforms are integral to the ecosystem by facilitating the buying, selling and trading of crypto that enables peer to peer trading with the crypto ecosystem. Crypto investors make up majority of the cryptocurrency community with a primarily focus to get financial capital gains from trading crypto assets. Crypto Miners, exchange platform and investors dependent stakeholders requires support services and transparency actions in the crypto ecosystem.

Ordinary citizen with the lowest salient model was considered as demanding stakeholders with only urgent claim in the crypto ecosystem. The public would like to see government regulate the decentralized crypto space and come up with policies that will protect the general public given the year-on-year surge in crypto related crimes globally. Thus, the crypto ecosystem should resolve as quickly resolve the general public concerns and issues with the cryptocurrency ecosystem.

Finally, although the contribution of this study is precise, the findings of the research paper must be used with caution because only in-depth literature review and Venn diagram was utilized by the author in his application and analysis of the stakeholder identification and salient model to the cryptocurrency ecosystem. Therefore, further studies could be conducted with direct discussions, interviews and empirical data collected from relevant decision makers within the crypto space to enhance the analysis and application of the stakeholder salient model in the crypto ecosystem.

Declaration of Competing Interest

None

Acknowledgements

The author wants to thank God the Father, God the Son, and God the Holy Spirit for His grace, wisdom, knowledge and understanding, direction, and provision in undertaking this research project. Moreover, a special thanks to Davida Hope Kanu and Davielle Hope Kanu, my beautiful daughters, and my mentor turn father Dr. Nelson Oniyama for their support and motivation in making this research a success.

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