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Gamification in Web3 Brand Communities: Transforming Loyalty into Tokenized Co-creation

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ABSTRACT

In decentralized digital economics era, consumer engagement has transitioned from platform-based loyalty to tokenized participation and co-creation. In Web2 brand communities, gamification often produce short-term loyalty due its reliance on external, platform regulated incentives (Deterding et al., 2011). The development of Web3 technologies has integrated verified ownership, tokenized incentives and decentralized governance, providing fresh pathways for sustained consumer engagement (Tapscott & Tapscott, 2016). This study introduces the Tokenized Co-Creation (TCC) Framework, which combines Self-Determination Theory (SDT) (Ryan & Deci, 2000) and Service-Dominant logic Theory (SDL) (Vargo & Lusch, 2004) to explain how Web3 powered gamification mechanics (NFTs, Token utilities and DAOs), satisfy intrinsic motivational needs and drive brand value co-creation (Hollebeek et al., 2019). This study contributes to the emerging literature of technological possibilities and human motivation under a overarching Tokenized Co-Creation(TCC) Framework, thus providing both theoretical advancement and managerial direction for developing a trust-based, participatory brand communities in decentralized setting.

***Keywords**: Web3 Gamification, Tokenized Co-Creation, Self-Determination Theory, Service-Dominant Logic, Brand Communities, Blockchain Ownership.*

Introduction

The digital evolution of brand engagement has moved through distinct phases, ranging from the passive information exchange of Web1 to platform-controlled participatory interactions of Web2. The rise of Web2 enabled user-generated communities and loyalty driven engagement (Sánchez-Fernández & Jiménez-Castillo, 2021). Yet, platforms kept control over user data and digital assets, restricting user agency and value contribution (Lai et al., 2023). In case of centralized model, gamification enhances participation through external, platform-controlled benefits like points and badges (Deterding et al., 2011), but they rarely lead to a strong emotional or ownership-based connection to brands.

Web3 technology is disrupting this dynamic with decentralized data, digital asset ownership and governance**.** Built on blockchain, Web3 empowers users to act as co-creators and value contributors rather than passive participant, aligning economic with community engagement (Horst Treiblmaier & Sillaber, 2020). Each token serves as a verifiable and tradable unit that can give access, control or governance rights, converting user engagement into value that can be measured and transferred. Unlike Web2 system that promote surface-level engagement, Web3 enables participants to gain true stakeholder ship in brand communities through ownership, participation and decentralized governance rights (Belk et al., 2022). Tokenization transforms decentralized ownership into a practical process,

forming the technological foundation for the **Tokenized Co-Creation (TCC) Framework** that the study has proposed.

This transformation indicates more than a technological shift, it signals the evolution of community engagement into a participatory economy where customers psychological needs are satisfied through verifiable ownership. Web3 gamification elements such as NFTs, tokens and DAOs satisfy intrinsic motivational needs of autonomy, competence and relatedness as proposed by **Self-Determination Theory(SDT)** (Ryan & Deci, 2000).

Accordingly, this study explores how token-based ecosystems can sustain engagement beyond extrinsic reward dependency by merging blockchain-enabled affordances with motivational mechanisms from **SDT** and value perspective of **Service-Dominant Logic** (Vargo & Lusch, 2004). This study therefore posits that Web3 gamification can drive sustained value co-creation when the technological foundation of tokenization intersect with the psychological principal of motivation participation.

This paper formulates the **Tokenized Co-Creation (TCC) Framework**, conceptualizing how Web3- native gaming tools like NFTs, tokenized rewards and decentralized automation organization (DAOs) can be used to drive brand value co-creation. This integration of technological decentralization with psychological provides a theoretical foundation for understanding long-term consumer engagement and co-created value in Web3 brand communities.

Therefore, this study introduces the **Tokenized Co-Creation (TCC) Framework** as a conceptual model illustrating how decentralized gamification can transform brand loyalty into sustainable, value-generating co-creation within participatory digital ecosystems.

Theme 1: Brand Community, Co-Creation, and the Centralisation Flaw of Web2

Modern marketing strategy is founded on brand communities, which are consumer groups that are linked by a shared relationship with a brand and exhibit characteristics such as moral responsibility and consciousness of kindness. These communities exhibit strong sociological indicators, such as shared identity and mutual concern, which drive advocacy and long-term brand survival (Muñiz & O'Guinn, 2001).

The purpose of cultivating such communities align with **Service-Dominant Logic (SDL)**, which view value is co-created through the active integration of resources between the consumer and the company "value-in-use" rather than value delivered (Vargo & Lusch, 2004; McColl-Kennedy et al., 2012). However, in case of Web2, the centralized architecture has resulted in ownership of user data, content and participation mechanisms remaining with brands and platforms. This structure limits consumer autonomy and their perceived co-ownership, **Self-Determination Theory (SDT)** (Ryan & Deci, 2000) identifies as core motivational needs.

Consequently, platform dominance often generated trust deficiencies, cultivating perceptions of exploitation instead of collaboration (Hsieh & Vergne, 2022; Merz et al., 2009). Furthermore, the considerable risks associated with co-creation, where failure might lead to strong negative consumer reactions (Heidenreich et al., 2014), are not properly controlled, thus limiting the potential of customers to be completely involved as co-invested stakeholders.

This theme highlights the central contradiction within Web2 brand communities, which is, while they claim to promote participation, their structural centralization restricts genuine user agency. This tension emphasizes the necessity of transitioning to a Web3-enabled tokenized environment where the aspect of ownership, governance and value creation are decentralized. Thus, dealing with the centralization flaw of Web2 is necessary for the development of decentralized, gamified brand communities that promote shared value creation, transparency and trust.

Theme 2: Motivation, Gamification, and the Psychological Bridge

The sustained engagement of consumer within brand communities increasingly relies on gamification, defined as the incorporation of game-design elements in non-gaming contexts to enhance motivation and participation (Deterding et al., 2011). In Web2 environments, nonetheless, such mechanisms are commonly simplified to superficial, extrinsic rewards (points, badges or leaderboards) that causes short-term stimulation but rarely foster long-term loyalty.

Self-Determination Theory (SDT) (Ryan & Deci, 2000) gives a strong foundation for understanding such a constraint. It posits that motivation becomes self-sustaining only when individuals psychological needs for **autonomy, competence and relatedness** are fulfilled. When gamified systems

rely heavily on controlling or material rewards, they trigger the “undermining effect”, which extinguishes the user's intrinsic motivation towards the activity (Lepper & Greene, 2015).

Consequently, traditional loyalty programs often produce surface-level engagement, with consumers participating only when immediate rewards are available, rather than contributing meaningfully to co-creation (Merhabi et al., 2021; Huotari & Hamari, 2017).

Combining **Self-Determination TheorySDT** with **Service-Dominant Logic (SDL)** (Vargo & Lusch, 2004), provides a stronger conceptual basis for understanding engagement in brand communities. SDT unravels the internal drivers of engagement, whereas **SDL** provides the external setting by characterizing the value as co-created through mutual interactions between consumers and firms. When gamified brand systems are intentionally designed to support autonomy, competence and relatedness, they align **intrinsic motivational satisfaction (SDT)** with **collaborative value creation (SDL).** The combination of the gamification approach with a non-rewarding mechanism leads to the empowerment of the community members who then become actively involved in the creation of the project’s value through their participation. Consequently, the psychological bridge established by **SDT** acts as the mediating factorsbetween the Web3 gamification tools and brand value co-creation, which align with the main gaol of developing the **Tokenized Co-Creation (TCC) Framework** in this study.

Theme 3: Web3-Native Mechanics and Transformative Alignment

The Web3 ecosystem embodied the ideal configuration to rectify the moral and ownership shortcomings that characterize the Web2 setting. It emphasizes decentralization, transparency, and user control, creating conditions for stronger community engagement (Hsieh & Vergne, 2022). The primary development is Tokenization, which is the process of replacing non-transferable points with digital assets that are verified and can be traded (NFTs and fungible tokens) (Belk et al., 2022; Treiblmaier & Sillaber, 2021). Tokenization transforms intangible values in extrinsic values to create extrinsic rewards into tangible economic and participatory value. This consequently allows user to engage as owners instead of passive participants.

A pivotal innovation of Web3-based brand communities is the integration of **Decentralized Autonomous Organizations (DAOs)**. DAO governance grants members transparent decision-making and voting rights (Hsieh & Vergne, 2022), thereby fulfilling the autonomy dimension of Self-Determination Theory SDT and legitimizing consumer influence over community (Akhavannasab et al., 2018). Similarly, NFTs act as authenticated “identity badges”, signalling individual achievement and long-term commitment (Brahmstaedt, 2025). In contrast with the classic loyalty badges, NFTs are authenticated proof of participation as well as reward. They satisfy SDT’s needs of relatedness and competence through acknowledgement and visibility.

Guided by **Service-Dominant Logic Theory(SDL),** these mechanism collectively transforms the consumer-brand relationship from hierarchical to **collaborative.** Value emerges through the integration of technological, social and psychological resources (Vargo & Lusch, 2004). Blockchain’s inherent transparency ensures that all inputs are visible, communicated and compensated, thereby enhancing the core factors of fairness, equity and trust that are essential for long-term engagement and value creation.

This theme directly supports the study’s title and objectives by explaining how Web3-based gamification through tokens, NFTs and DAOs, enables the shift from loyalty to tokenized co-creation,operationalizing the principles of the Tokenized Co-Creation (TCC) Framework. Web3 architecture provides the infrastructural and psychological basis for sustainable, community-led brand co-creation, marking a fundamental evolution in digital engagement paradigms.

Research Gaps

While gamification and community engagement in digital ecosystems have been studied extensively (Deterding et al., 2011; Hamari & Koivisto, 2015), current frameworks are limited in explaining how **verified, decentralized ownership and token-based economic alignment** in Web3 environments can address the trust deficit characteristic of Web2 models (Tapscott & Tapscott, 2016; Beck et al., 2018). These frameworks also fall short in explaining how decentralization empowers consumers as holistic resource integrators in the process of brand co-creation (Prahalad & Ramaswamy, 2004).

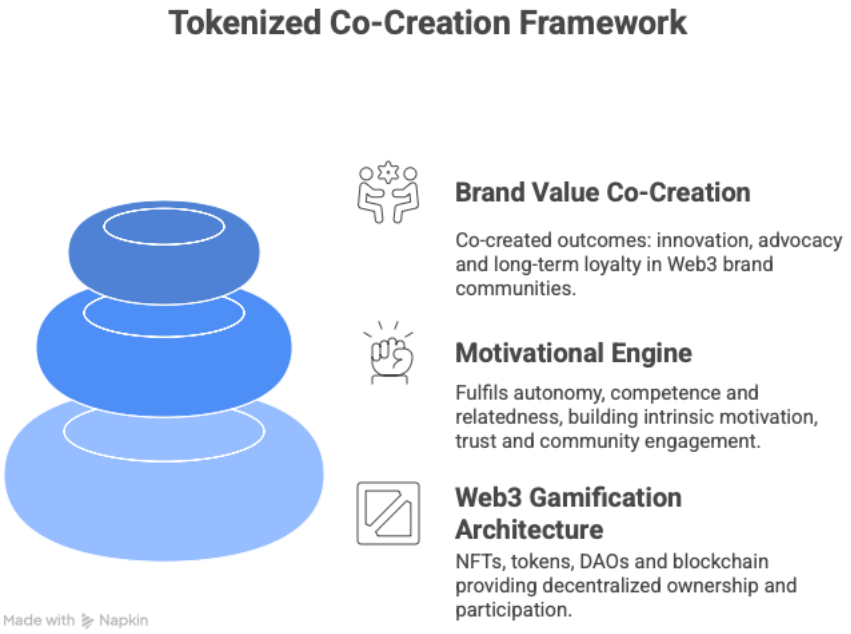
Furthermore, current research inadequately addresses how tokenized and verified digital assets fulfil the core psychological needs (autonomy, competence and relatedness) of Self-Determination Theory (SDT) (Ryan & Deci, 2017) to sustain intrinsic motivation in decentralized brand communities.

While prior studies recognize the motivational impact of gamification, few have examined how technological decentralization itself can nurture intrinsic engagement and participatory behaviour.

A critical theoretical gap also persists in integrating **Service-Dominant Logic (SDL)** with Self-Determination Theory to capture how **psychological motivation** and **technological decentralization** coact to drive co-creation. Specifically, there is an absence of a comprehensive Tokenized Co-Creation (TCC) Framework that systematically connects Web3-native gamification mechanics (e.g., DAO voting, NFT-based status, token utility) with motivational mediators to explain and sustain brand value co-creation in decentralized ecosystem (Fuchs & Schreier, 2010; Brodie et al., 2013; Hollebeek et al., 2019).

Understanding this theoretical gap is essential to conceptualizing how brands can transition from transactional loyalty model to intrinsically motivated, co-creative ecosystems within decentralized communities. Thus, this study fills a cortical void by proposing the tokenized co-creation (TCC) Framework, which integrates technological decentralization with psychological motivation to explain how web3 gamification can transform loyalty into sustained value co-creation.

Framework Proposed: Tokenized co-creation



The Tokenized Co-Creation (TCC) Framework represents the unification of Web3 gamification architecture and self-determination- driven motivational processes demonstrating the way decentralized brand communities create and sustain value. This framework links the technological decentralization with the motivational aspect of psychology and demonstrates the transition in consumer-brand relationship from transactional loyalty co-creation through the effects of tokenized ownership, participatory governance and intrinsic engagement.

The progression of Web2 to Web3 offers a unique opportunity for brands to reinvent customer engagement. In centralized environments, traditional gamification approaches, focused on eccentric rewards such as points, badges, leaderboards which tend to undermine intrinsic motivation and limit long-term engagement (Ryan & Deci, 2000; Lepper & Greene, 1975; Dahlstrøm, 2015). In contrast, the adoption of blockchain, NFTs and DAOs introduces verifiable ownership, transparency and participatory governance into brand communities, converting members from passive participants to active co-creators (Boukis, 2019; Kaal, 2021; Prahalad & Ramaswamy, 2004).

Self-Determination Theory (SDT) serves as the foundation for Web3 gamification to create an environment of intrinsic motivation through granting the psychological need of autonomy, competence and relatedness, which results in the highest level of emotional and behavioural engagement. . Complementing this, Service-Dominant Logic Theory (Vargo & Lusch, 2004) view value as co-created

through reciprocal interactions between firms and consumers. Together, Self-Determination Theory (SDT) and Service-Dominant Logic (SDL) lay down the twofold basis of the TCC model: the former elucidates the motivational processes that lead to participation, whereas the latter clarifies the logic of co-creation in which engagement becomes shared brand value.

In this model, the independent variables Web3 gamification mechanics, which are tokenized rewards, NFT-based ownership and DAO participation. The mechanism in question affect the mediating factors of community engagement, trust and intrinsic motivation, which in unison, facilitate the dependent variable of brand value co-creation that is manifested in terms of the three aspects: innovation, advocacy and loyalty for a long time.

The conceptual model highlights the dynamic interplay between technological affordances and psychological mechanisms, capturing the transformational potential of Web3 gamification for brand communities (Merhabi et al., 2021; Li & Aumeboonsuke, 2025; Tyagi & Singh, 2022; Neves et al., 2024). The suggested model (Figure 1) effectively illustrates the aforementioned process, the journey through the intermediaries of engagement, trust and intrinsic motivation being the decentralized gamification elements leading to co-created brand value.

The TCC framework progresses the knowledge about the gamification strategies in decentralized ecosystems as the driving force for participation, co-creation and mutual value generation, which is an extension of the traditional engagement paradigms in the Web3 era.

Discussions and Implications

This discussion aims to clarify the ways through which the Tokenized Co-Creation (TCC) framework, by linking intrinsic motivation with technological decentralization, overcomes main inadequacies of the classical gamification theory. Existing gamification models, largely situated within centralized Web2 ecosystems, rely on extrinsic, platform-controlled incentives such as points, badges and leaderboards (Werbach & Hunter, 2020). These mechanisms generate temporary engagement but rarely foster long-term commitment or psychological ownership, as they fail to satisfy the core intrinsic needs of autonomy, competence and relatedness (Ryan & Deci, 2000).

The TCC Framework illustrates how Web3-powered gamification through the useu of blockchain, digitalized assets (NFTs) and Centralized Autonomous Organizations (DAOs), not only changes this scenario but also integrates the attributes of ownership, transparency and participatory governance into the community structure around the brand. These mechanism transform engagement from mere transactional participation to a purpose-driven co-creation process where the consumers are given the power to be co-owners and contributors of value instead of just waiting to be rewarded as passive users.

In doing so, the framework reconceptualizes gamification as psychological-technological integration rather than pure behavioural strategy. It shows that when technological affordances such as tokenized ownership and decentralized governance align with intrinsic motivational drivers (SDT), they produce sustained engagement and trust, which ultimately lead to brand value co-creation (SDL).

Therefore, the TCC Framework opens up new areas for gamification theory by showing that decentralization of technology makes intrinsic motivation possible and at the same time, it connects psychological theory and digital innovation in the Web3 context.

Theoretical Contributions

Through the Tokenized Co-Creation (TCC) Framework, the amalgamation of Self-Determination Theory (SDT) and Service-Dominant Logic (SDL) connects the psychological and marketing viewpoints on consumer engagement. . SDT emphasises the innate psychological needs of autonomy, competence and relatedness, explaining how Web3 protocols can satisfy these needs to foster intrinsic motivation and sustained (Ryan & Deci, 2000). SDL, on the other hand, reorients the view of brands communities towards value co-creation, emphasizing communication and shared innovation rather than firm-controlled marketing (Vargo & Lusch, 2004).

Together, these theories explain how Web3 gamification mechanisms such as blockchain-enabled rewards, NFT ownership, and DAO-based governance act as resource integrators that enhance community engagement, trust and intrinsic motivation, which are key mediators leading to co-created brand values (Prahalad & Ramaswamy, 2004; Verleye et al., 2013).

This theoretical synthesis contributes to gamification literature by situating it within a decentralized ecosystem and identifying the roles of technological transparency, ownership and participatory design in sustaining engagement and innovation (Li et al., 2025). It also aligns with recent evidence that gamified blockchain environments enhances motivation by granting user control, identity and recognition (Hamari et al., 2014). Furthermore, the TCC Framework highlights how digital ownership and decentralized governance are reshaping the motivational structure of brand communities, bridging technological affordances with human psychological (Casino et al., 2019; Papagiannidis et al., 2025). Comprehensively, Web3 gamification is portrayed as a blend of motivational architecture and value co-creation by the collective insights, which consequently extends the theoretical frontiers of engagement research.

The TCC Framework not only extends the realm of current literature but also combines psychological motivation (SDT) with technological decentralization (Web3) using the value co-creation paradigm (SDL) as the ground, thus paving the way for a comprehensive model that scrutinizes engagement and innovation in decentralized brand ecosystems.

Managerial Implications

The proposed model provides a strategic roadmap for professionals in the Web3 ecosystems to create collaboration-based, co-branded systems in participatory manner. A successful adoption of gamification in Web3 requires more than simply implementing a reward mechanism; it demands architectures of participation that empower community members to contribute meaningfully (Werbach & Hunter, 2012; Deterding et al., 2011). Firms can leverage DAOs to distribute control rights, NFTs to establish verifiable digital ownership, and blockchain technology to ensure transparent and reliable contribution traction tracking (Beck et al., 2018; Casino et al., 2019). When these elements are coherently aligned, they reinforce trust, loyalty and innovation by positioning shared value creation as the common incentive (Li et al., 2025).

Managers should focus on intrinsic rewards rather than rely on extrinsic rewards solely. . Designing communities that promote belonging, purpose, and autonomy helps fulfil the psychological needs of autonomy competence and relatedness (Ryan & Deci, 2000). Such conditions foster emotional attachment and accountability, encouraging members to engage in advocacy, innovation and co-creation activities (Prahalad & Ramaswamy, 2004).

In addition, the manager must quantify the engagement metrics such as trust, co-creative participation and innovation in order to measure the success of decentralized governance systems. These insights enable brands to refine their gamification designs and align governance practices with motivational outcomes (Vargo & Lusch, 2016; Wu et al., 2023).

Essentially, gamification should not be viewed merely as an engagement tactic but as a strategic design for shared governance and co-created value, where technological decentralization and psychological motivation convergence to build enduring brand-community relationship.

Therefore, managers can utilize the TCC Framework as a strategic guide to develop decentralized, trust-building brand communities that foster ongoing innovation and consumer loyalty.

Social Implications

The integration of Web3-based features in brand communities foster large-scale social value creation by decentralizing control, participation and ownershio among users. Through transparent rewards systems and decentralized governance, consumer evolve from passive participation and clear rewards systems helps consumers move from passive consumers to active co-creators of value. This aligns with SDT, which focuses on motivational significance of autonomy, competence and relatedness (Ryan & Deci, 2000).

Web3 infrastructures, built upon blockchain technology, enhance data transparency and verifiable ownership, strengthening users trust and sense of control within digital ecosystem (Hakkarainen & Colicev, 2023). Decentralization, from SDL viewpoint, allows consumers, brands and communities to participate as resource integrators in value co-creation process. A digital ecosystem characterized by an equal distribution of power and control between intermediaries and participants, where innovation and recognition are shared among contributors instead of being monopolized by centralized actors, is the result of this change.

Moreover, tokenized participation models, including NFTs for contribution recognition and DAO-based community governance, foster social belonging and mutual support, thereby facilitating inclusive digital development and community cohesion (Bhattacharya, 2023).Web3-driven engagement fosters broader digital inclusion by enabling diverse user groups to participate in decentralized value networks previously inaccessible under Web2 framework (Ericsson, 2023; Tan et al., 2022).

The transparency inherent in blockchain enhances ethical brand interactions by creating traceable, tamper-proof records of ownership and participation. This discourages exploitative marketing practices while reinforcing authenticity and accountability (Sedlmeir et al., 2022; Beck et al., 2018). Collectively, these developments position tokenized co-creation as not only a marketing innovation but also a socio-technological model for participatory empowerment and trust-based digital community building (Frontiers, 2024; Ryan & Deci, 2017).

Consequently, tokenized co-creation not only redefines brand engagement but also promotes a more equitable and empowered digital society.

Conclusion

This study demonstrates hoe gamification in Web3 brand communities transform traditional loyalty models into tokenized co-creation ecosystems. The introduction of the Tokenized Co-Creation (TCC) Framework not only links the areas of technological decentralization and human motivation but also contributes to development of both gamification and value co-creation theories.

The Self-Determination Theory (SDT) and Service-Dominant Logic (SDL) serves as the basis of the framework that combines motivation and marketing perspectives in a way to show how the blockchain-enabled rewards, NFTs ownership and DAO participation foster intrinsic motivation by fulfilling psychological needs of autonomy, competence and relatedness. Such mechanisms create not only continuous engagement but also trust, advocacy and innovation, hence, transforming consumers into collaborators that are given power and not just passive participants.

The framework contributes theoretically by extending research on gamification and brand communities into the Web3 paradigm, where engagement is sustained through ownership, transparency and participatory governance rather than extrinsic rewards (Treiblmaier & Sillaber, 2021; Hamari et al., 2014). It deepens the understanding of how technology-driven transparency and decentralized ownership reshape brand relationships, providing a foundation for future empirical investigation (Honkanen et al., 2021; Rozas, Tenorio-Fornés, Díaz-Molina, et al., 2021; Martínez-López et al., 2021)

From a managerial perspective, the TCC Framework guides organizations in building participatory, trust driven ecosystems. Managers can use NFTs for digital ownership, DAOs for collaborative governance and blockchain for transparent accountability to cultivate belonging, competence and shared purpose (Li et al., 2025; Casino et al., 2019) . such structures transform communities into innovation networks, where co-creation and mutual value generation are embedded in the brand's architecture.

As a conceptual study, the findings are based on theoretical interpretation rather than empirical validation. Future researchers should validate the framework through quantitative testing, such as structural Equation Modelling (SEM) or experimental and longitude designs, to measure how psychological motivation and decentralized participation influence trust and innovation over time. Additional research can also explore sector-specific applications of tokenized gamification in fintech, retail, fashion and education, examining how digital ownership affects consumers loyalty and creative contribution.

Ultimately, tokenized Co-Creation offers a vision of brand communities where engagement is not earned through rewards but co-owned through shared value and purpose, signifying the future of human-technology collaboration in marketing and digital innovation.

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