

Blockchain Trust Mechanisms in Digital Marketplaces: A New Era of Transparent Consumer Capitalism

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<b>KEYWORDS</b> <i>Blockchain Governance; Digital Marketplaces; Surveillance Capitalism; Algorithmic Power; Decentralized Trust; Consumer Exploitation; Immutable Ledgers; Data Transparency; Platform Monopolies; Digital Commodification.</i>	<b>ABSTRACT</b> The rise of blockchain technology in digital marketplaces has been widely celebrated as a revolutionary shift toward transparent, decentralized, and consumer-empowering commerce. Yet this narrative often obscures deeper structural implications that challenge the idealized vision of a trustless digital economy. This study critically examines blockchain trust mechanisms as instruments that simultaneously enhance transparency while reinforcing new forms of techno-capitalist power, data extraction, and algorithmic governance. Through a conceptual analysis supported by interdisciplinary literature, the paper argues that blockchain does not inherently decentralize trust; rather, it reconfigures trust around code-based authority, platform governance, and corporate-controlled infrastructures. While immutable ledgers reduce fraud and information asymmetry, their permanence introduces new risks related to surveillance, digital identity tracking, and consumer behavioral profiling. The integration of blockchain into digital marketplaces creates a hybrid trust regime where decentralized protocols coexist with highly centralized economic actors, including global corporations, platform monopolies, and institutional investors. The findings reveal that blockchain-enabled transparency can be double-edged empowering consumers through verifiability while simultaneously intensifying capitalist logics of auditability, data commodification, and market discipline. The study concludes that blockchain is less a tool of consumer liberation and more a technological evolution of surveillance capitalism, embedding trust not in democratic decentralization but in cryptographically enforced compliance. The paper calls for critical governance frameworks that address the social, ethical, and political economy implications of blockchain-based digital marketplaces.. ..
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1. INTRODUCTION

Blockchain technology is frequently portrayed as a transformative force capable of decentralizing power, dismantling monopolistic platforms, and restoring control to consumers by enabling trustless and transparent digital transactions. This celebratory narrative, rooted in techno-utopian ideals, suggests that distributed ledgers can eliminate the need for corporate intermediaries while empowering individuals through cryptographic verification and decentralized governance. However,.



beneath these claims lies a more complex and deeply problematic reality in which blockchain mechanisms do not dismantle capitalist power structures, but instead reconfigure them into more opaque, automated, and difficult-to-contest digital regimes. In practice, blockchain's introduction into digital marketplaces has accelerated a new phase of consumer capitalism characterized by algorithmic authority, immutable surveillance, data commodification, and platform-driven economic discipline. Rather than decentralizing trust, blockchain often centralizes market control within technologically sophisticated corporate actors who govern protocol rules, manage token economies, shape consumer behavior, and extract value from transactional data under the guise of transparency

The promise of "trustlessness" must therefore be critically examined. Blockchain removes the requirement to trust human intermediaries but replaces them with computational intermediaries: smart contracts, consensus protocols, mining pools, validator nodes, and platform orchestrators whose design, governance, and interests remain concentrated in the hands of private corporations and dominant market actors. This shift represents not the elimination of trust, but a relocation of trust from institutional accountability to algorithmic enforcement. Digital marketplaces adopting blockchain infrastructure increasingly embed consumer interactions within immutable records, where every transaction, preference, and behavior becomes permanently inscribed and economically valuable. Unlike traditional databases, blockchain's immutability grants corporations unprecedented capacity for long-term behavioral profiling and surveillance, intensifying the logic of data-driven capitalism. These features challenge the assumption that transparency inherently benefits consumers; instead, transparency becomes asymmetrical, with corporations gaining visibility into consumer actions while consumers remain largely excluded from understanding or influencing back-end governance processes.

Furthermore, blockchain-based marketplaces often reproduce and amplify inequalities under the rubric of decentralization. Tokenized ecosystems create speculative dynamics that disproportionately benefit early adopters, venture capital firms, and platform insiders, producing new forms of digital class stratification. Power does not dissipate; it migrates into cryptographic infrastructures governed by economic elites whose interests shape the evolution of blockchain protocols. Even in decentralized-finance (DeFi) environments, governance tokens and staking mechanisms often allow a small minority of large token holders to dominate voting processes, resulting in oligarchic decision-making structures that contradict the rhetoric of democratization. As digital marketplaces integrate blockchain to enhance traceability in supply chains, authenticate consumer goods, or streamline peer-to-peer exchanges, they simultaneously embed consumers within algorithmic trust systems that reward compliance and penalize deviation, reinforcing behavioral regulation rather than empowerment.

### **Research Aim**

The aim of this research is to critically investigate how blockchain-based trust mechanisms transform the governance, power structures, and consumer relations within digital marketplaces. The study seeks to examine whether blockchain genuinely decentralizes trust or instead reinforces new regimes of surveillance, capitalist extraction, and algorithmic authority. By analyzing blockchain's role in shaping transparency, accountability, and control dynamics, the research aims to uncover how distributed ledger technologies contribute to a new era of digitally intensified consumer capitalism, where "trust" becomes automated, commodified, and embedded within corporate-driven technological infrastructures.

### **Research Problem**

Despite widespread claims that blockchain democratizes trust and reduces the dominance of centralized corporate intermediaries, emerging evidence suggests that blockchain integration in digital marketplaces may actually deepen structural inequalities, expand surveillance capabilities, and strengthen capitalist modes of consumer control. The problem lies in the growing discrepancy between blockchain's ideological promises: decentralization, transparency, and consumer empowerment and its practical implementation, which often centralizes power among protocol developers, mining or validation cartels, platform owners, and early token investors. As blockchain infrastructures become embedded in e-commerce platforms, supply chains, advertising ecosystems, and digital identity systems, they increasingly function as tools of algorithmic governance that record consumer behavior immutably, incentivize compliance, and monetize transparency. This shift generates new vulnerabilities, including data permanence, privacy erosion, opaque governance, market manipulation, and inequitable distribution of technological benefits. The absence of critical regulatory frameworks further exacerbates these concerns, raising the urgent question of whether blockchain represents a genuine trust revolution or simply a technologically fortified extension of surveillance capitalism. Understanding this contradiction constitutes the central research problem.

### **Research Objectives**

To examine how blockchain trust mechanisms reshape power relations within digital marketplaces and influence consumer agency in environments dominated by corporate and algorithmic governance.

To analyze the extent to which blockchain decentralization claims align with real-world implementations, especially in relation to market control, protocol authority, and token-based governance.

To investigate how blockchain-enabled transparency contributes to new forms of surveillance, behavioral tracking, and data commodification that reinforce capitalist extraction.



To identify the structural, economic, and technological factors through which blockchain systems reproduce or intensify existing inequalities, including market concentration, token distribution, and information asymmetry.

To evaluate the broader socio-economic implications of blockchain adoption in digital marketplaces, particularly regarding consumer autonomy, privacy, and participation in decision-making systems.

## 2. LITERATURE REVIEW

The literature on blockchain in digital marketplaces has grown substantially over the past decade, yet much of the early scholarship tended to emphasize its decentralizing potential and ability to eliminate dependence on centralized intermediaries. Initial studies framed blockchain as a breakthrough in establishing trust in “trustless” environments, where cryptographic verification and consensus protocols replace institutional authority [1]. These narratives celebrated blockchain as a technological innovation capable of empowering consumers, reducing fraud, and democratizing market participation. However, critical scholarship has increasingly challenged this optimistic framing, arguing that blockchain often reproduces and in some cases intensifies existing capitalist power dynamics. Zuboff’s theory of surveillance capitalism, though not focused solely on blockchain, provides an essential foundation for understanding how transparency becomes a mechanism for data extraction and behavioral governance within digital economies [9]. Within blockchain ecosystems, transparency is not neutral; it enables corporations and platform operators to track consumer behavior with unprecedented visibility, embedding surveillance directly into decentralized infrastructures.

Recent studies reveal that blockchain does not inherently decentralize control, but instead shifts power into the hands of technically sophisticated actors who design, maintain, and govern the underlying protocols. Research on mining concentration shows that a small number of mining pools dominate proof-of-work systems, creating oligopolistic structures that contradict decentralization claims [3]. Similar patterns appear in proof-of-stake ecosystems, where those with the most tokens gain disproportionate governance power, reinforcing wealth accumulation and capitalist stratification [4]. These findings align with critical analyses of digital marketplaces, which argue that blockchain infrastructures often mask centralized control behind narratives of distributed trust [6]. Instead of eliminating intermediaries, blockchain introduces new types of intermediaries: protocol developers, validators, platform operators, and token holders who exert algorithmic authority over consumer interactions.

A substantial body of literature also interrogates blockchain’s role in expanding transparency, particularly in supply-chain verification and consumer marketplaces. While proponents argue that transparency enhances accountability and reduces information asymmetry, critical scholars contend that blockchain-enabled transparency can produce coercive forms of visibility that discipline both consumers and workers [7]. Immutable records facilitate lifelong data tracking, undermining privacy rights and enabling corporate actors to aggregate behavioral insights for targeted marketing, dynamic pricing, and consumer profiling. This aligns with research showing that decentralized technologies can inadvertently enable more sophisticated forms of surveillance when integrated into market infrastructures [10].

Another important strand of literature examines the embedding of blockchain within platform capitalism. As global corporations adopt blockchain to streamline logistics, authenticate digital goods, and manage consumer identities, scholars warn that blockchain risks becoming another instrument of monopolistic consolidation rather than a tool for democratization [11]. Decentralization rhetoric often masks the reality that major blockchain networks rely on corporate governance structures, venture capital funding, and platform-centric token economies. Studies in political economy emphasize that blockchain platforms frequently use “decentralization theater” to legitimize extractive practices that reinforce capitalist accumulation [12]. Token economies, in particular, are criticized for generating speculative financialized environments that disproportionately benefit early adopters and institutional investors, further entrenching inequality [5].

Finally, emerging literature highlights blockchain’s ideological function within digital capitalism. By promoting the idea that trust can be automated through code, blockchain shifts attention away from social, ethical, and political dimensions of market governance. Critical scholars argue that trust becomes commodified, encoded, and monetized through blockchain infrastructures, transforming consumer relations into algorithmically regulated transactions [8]. This process embeds consumers within systems of immutable surveillance, where compliance is enforced not through institutional oversight but through irreversible programmatic rules. In effect, blockchain can serve as a tool for reinforcing neoliberal norms of self-regulation, transparency, and market discipline.

Across these intersecting scholarly domains, a consistent theme emerges: blockchain mechanisms are neither inherently liberatory nor structurally neutral. Instead, they function as socio-technical systems that reshape power, trust, and governance in digital marketplaces in ways that often reproduce capitalist logics of exploitation, surveillance, and inequality. This evolving body of critical literature underscores the need to interrogate blockchain not only as a technological innovation but as a political-economic force that redefines consumer capitalism through algorithmic transparency and data-driven market control.

## 3. METHODOLOGY



This study adopts a critical, conceptual methodology designed to investigate how blockchain trust mechanisms reshape power relations, surveillance structures, and consumer experiences within digital marketplaces. Rather than employing empirical estimation, the methodology relies on theoretical synthesis, political economic critique, and interpretive analysis drawn from interdisciplinary literature across blockchain studies, surveillance capitalism, institutional economics, and digital governance. The research begins by mapping the socio-technical architecture of blockchain systems including consensus algorithms, smart contracts, validator networks, governance tokens, and platform-based blockchain applications to identify the embedded power hierarchies that influence consumer interactions. This structural mapping is then paired with a critical discourse analysis of decentralization narratives, examining how corporate actors leverage transparency rhetoric to legitimize new forms of data extraction, behavioural monitoring, and algorithmic control. The methodology further synthesizes findings from case studies of blockchain-enabled marketplaces and supply-chain systems to identify patterns of asymmetrical transparency, coercive visibility, and market discipline imposed on consumers. Drawing on frameworks of surveillance capitalism [9], digital labour extraction [12], and crypto economic governance [4], the study critically evaluates how blockchain infrastructures reproduce capitalist dynamics under the guise of distributed trust. Additionally, the methodology incorporates a conceptual examination of the negative externalities associated with immutable data structures such as irreversible consumer profiling and long-term digital traceability to assess how blockchain alters the political economy of privacy and consumer rights. This approach enables a comprehensive, theory-driven understanding of how blockchain technology restructures trust, authority, and market governance in ways that may reinforce rather than challenge existing power asymmetries. By integrating insights from critical theory and technological analysis, the methodology provides a robust foundation for the subsequent analysis and discussion of blockchain's broader implications for transparent consumer capitalism.

#### 4. ANALYSIS & DISCUSSION

The analysis reveals that blockchain trust mechanisms fundamentally reshape the architecture of digital marketplaces by embedding consumers within highly structured systems of algorithmic governance rather than genuinely decentralized forms of economic participation. While blockchain is framed as a technological solution to the crisis of trust in digital commerce, the findings illustrate that its promise of transparency is double-edged expanding visibility in ways that empower platforms and corporations far more than the consumers it claims to liberate. At the core of blockchain-based marketplaces lies an immutable ledger that permanently records every transaction and interaction. Although this recordkeeping is praised for reducing fraud and information asymmetry, it simultaneously produces an environment where consumer behavior becomes endlessly traceable, auditable, and monetizable. Such conditions reproduce the logic of surveillance capitalism, wherein transparency is not reciprocal but asymmetrical, benefiting those with the power to analyze, own, and exploit the data.

A critical examination of marketplace dynamics shows that blockchain does not eliminate intermediaries; it transforms them into technical and algorithmic actors validators, protocol developers, and governance token holders whose influence often surpasses that of traditional intermediaries. This contradicts decentralization narratives and reveals how blockchain embeds consumers within technocratic power structures disguised as distributed networks. These findings align with broader critiques of platform capitalism, where technological infrastructures function as tools for consolidating economic power rather than dispersing it. Table 1 summarizes how blockchain mechanisms, despite their rhetoric, often reinforce capitalist dynamics that shape contemporary digital marketplaces.

**Table 1: Contradictions Between Blockchain Promises and Marketplace Realities**

Blockchain Promise	Marketplace Reality	Critical Implication
Decentralized trust	Power concentration in validators, developers, and token elites	Reinforces oligarchic control structures
Transparency	Asymmetric visibility favoring platforms	Expands surveillance and behavioral oversight
Consumer empowerment	Algorithmic enforcement of compliance	Reduces autonomy and increases digital discipline
Removal of intermediaries	Emergence of technical and governance intermediaries	Masks new forms of centralization
Democratic participation	Token-weighted governance dominated by wealthy actors	Reproduces capitalist inequality

The analysis further demonstrates that blockchain alters market governance by embedding economic rules directly into smart contracts and protocol logic, creating environments where power becomes both technical and invisible. In traditional



commerce, governance mechanisms are subject to regulatory oversight and institutional accountability. In blockchain-enabled marketplaces, governance is encoded in software, reducing opportunities for contestation or democratic input. Consumers entering these marketplaces must accept algorithmic rules that dictate transaction terms, identity verification, dispute resolution, and even market access. As a result, trust becomes automated, and consumers are subjected to systems where compliance is enforced cryptographically rather than negotiated socially. This marks a critical shift in consumer capitalism: instead of trusting institutions, consumers must trust code—yet the design and control of that code remain deeply political and economically motivated.

A significant dimension of this shift is the commodification of transparency. Blockchain's verifiable traceability is frequently marketed as a feature that enhances consumer confidence, especially in supply-chain contexts such as food safety, luxury goods authentication, and ethical sourcing. However, the analysis exposes how this form of "verified transparency" often becomes a premium service marketed to affluent consumers, thereby monetizing trust itself. Transparency, in this context, is not a universal right but an economic commodity available only to those who can afford it. Meanwhile, the same transparency mechanisms allow corporations to track purchasing habits, evaluate consumer loyalty, and engage in targeted marketing strategies that rely on immutable behavior profiling.

The integration of blockchain into digital marketplaces also intensifies financialization. Token economies embedded in blockchain platforms transform consumer interactions into speculative activities, where participation is often tied to token holdings, staking mechanisms, or reward structures. This creates market environments that privilege early adopters and institutional investors—those with the capital necessary to accumulate governance tokens and influence protocol development. The resulting economic hierarchy mirrors broader capitalist tendencies, reinforcing inequality within systems that claim to be decentralized and democratic. Table 2 outlines the key spillover effects of blockchain trust mechanisms on capitalist market structures.

**Table 2: Structural Effects of Blockchain Trust Mechanisms on Consumer Capitalism**

Structural Outcome	Description	Impact on Consumers
Increased Financialization	Tokenized participation and speculation	Exposes consumers to volatility and inequality
Immutable Surveillance	Permanent recording of transactions and identities	Reduces privacy; enhances behavioral profiling
Algorithmic Governance	Smart contracts regulate participation	Limits dispute resolution and consumer agency
Capital Concentration	Token and validator dominance by elites	Reinforces economic stratification
Market Discipline	Transparency used to incentivize compliant behavior	Amplifies coercive marketplace dynamics

Finally, the analysis shows that blockchain's introduction into digital marketplaces is not simply a technological enhancement but a socio-economic transformation that intensifies capitalist modes of control. By embedding trust into code, blockchain removes the ambiguity and negotiability of human-centered commerce and replaces it with systems where every action is monitored, permanent, and subject to algorithmic interpretation. This creates a more rigid and disciplined consumer environment that ultimately benefits platforms, investors, and corporate actors while restricting the autonomy, privacy, and power of consumers. The findings thus position blockchain not as a disruptive force against capitalism but as a technological extension of it one that refines and reinforces the infrastructures of surveillance, commodification, and inequality that define contemporary digital consumer markets.

## 5. CONCLUSION

The critical examination of blockchain trust mechanisms in digital marketplaces reveals that the technology, far from decentralizing power or empowering consumers, often reinforces the underlying structures of contemporary surveillance capitalism and digital exploitation. Although blockchain introduces verifiable transparency and tamper-resistant recordkeeping, these features disproportionately benefit platform owners, corporations, and early token investors, who accumulate structural power through governance privilege, data visibility, and control over protocol logic. The analysis demonstrates that blockchain's promise of trustlessness merely shifts trust from institutional intermediaries to algorithmic systems, which lack democratic oversight and embed predetermined rules that consumers cannot meaningfully contest. Immutable ledgers, while reducing fraud, also create conditions of irreversible consumer traceability that intensify data extraction and behavioral monitoring. Rather than enabling consumer autonomy, blockchain systems frequently impose





algorithmic discipline and economic precarity through tokenized participation models that reward compliance and magnify inequality. The findings underscore that blockchain-enabled marketplaces do not transcend capitalist logic; instead, they accelerate its expansion into new technological domains, transforming trust into a commodified service and transparency into a mechanism for corporate power consolidation. Ultimately, blockchain inaugurates not a post-capitalist future, but a technologically fortified stage of consumer capitalism where power is redistributed upward under the guise of decentralization. This necessitates a re-evaluation of blockchain's social, ethical, and political implications beyond its technical efficiencies, highlighting the urgent need for critical governance and regulatory frameworks that address the deeper injustices embedded in blockchain-mediated consumer economies.

## 6. FUTURE WORK

Future research should expand beyond technological evaluation and engage more deeply with the socio-political consequences of blockchain adoption within digital marketplaces. A pressing direction involves developing multi-disciplinary models that integrate political economy, critical data studies, and algorithmic governance analysis to assess how blockchain restructures consumer autonomy, privacy, and participation. Further empirical investigation is needed to examine real-world blockchain marketplaces, documenting how power is distributed among validators, developers, corporations, and consumers, and how these structures impact fairness and accountability. Researchers should also explore the long-term societal implications of immutable consumer data, including the risks associated with algorithmic profiling, cross-platform identity tracking, and the potential weaponization of transparency by corporate actors or states. Another critical area involves evaluating governance models capable of mitigating capitalist concentration within blockchain ecosystems, such as democratic protocol design, public-interest blockchain infrastructures, and cooperative token distribution mechanisms. Comparative studies across jurisdictions can illuminate how regulatory frameworks shape blockchain's socio-economic effects and whether certain legal environments better protect consumer rights. Finally, there is a need for forward-looking critiques examining how emerging blockchain innovations such as zero-knowledge proofs, decentralized identity, and cross-chain interoperability may either challenge or reinforce existing patterns of exploitation and digital inequality. Addressing these lines of inquiry will be essential for understanding blockchain's evolving role in the future of consumer capitalism and developing equitable strategies for technological governance.

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