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# Second-Hand Marketplace Platform – ShareMate

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**Abstract**

With the growing demand for affordable and sustainable consumption, users are increasingly turning to peer-to-peer rental and resale platforms. However, existing marketplaces like OLX and Quikr often face challenges related to trust, verification, and data transparency, which discourage users from engaging confidently. Low user trust, fraudulent listings, and inefficient transaction handling are examples of hidden issues that can compromise user safety and platform reliability. Existing systems do not have an integrated, community-focused approach; instead, they rely solely on basic user ratings and fragmented listings. This paper presents ShareMate, a community-driven second-hand rental and resale platform designed to ensure secure, verified, and transparent exchanges among users. The platform uses AI-driven recommendations and multi-layered verification to scan listings for hidden risks, and generates complete trust and sustainability reports. Furthermore, the system integrates smart deposit handling and sustainability tracking, allowing users to better understand the positive environmental impact of their resource reuse. By integrating multi-content threat detection with consequence visualization, this work proposes a unified solution to improve cybersecurity awareness and promote safe online practices. The rapid growth of online rental and resale platforms underscores the need for trustworthy, transparent, and sustainable systems to serve both urban and semi-urban communities. Existing second-hand marketplaces, such as OLX and Quikr, are often fragmented, unregulated, and struggle to establish user confidence due to a lack of structured frameworks and effective verification mechanisms.

## Introduction

The rapid growth of online resale and rental platforms highlights the need for trustworthy, transparent, and sustainable systems that can serve both urban and semi-urban communities. In many regions, existing second-hand marketplaces are fragmented, unregulated, and often fail to establish user confidence due to the absence of verification mechanisms and structured rental frameworks. While platforms like OLX and Quikr cater primarily to urban audiences, they do not effectively address the challenges of peer-to-peer trust, fraudulent listings, or sustainable consumption. This gap creates a practical challenge: designing a marketplace that not only facilitates efficient item exchange but also ensures safety, accountability, and accessibility across diverse user environments. Any technological framework intended to promote resource sharing and reuse must therefore be developed with inclusivity, transparency, and community engagement as core design principles rather than

assuming a one-size-fits-all solution.
Building a trustworthy transaction model is central to making the platform beneficial for both lenders and borrowers. Unlike conventional listing systems that rely solely on user ratings, ShareMate integrates multi-layered verification, deposit protection, and behavioral feedback mechanisms to assess credibility. The system's AI-driven recommendation engine optimizes item visibility and matching accuracy based on user preferences, location proximity, and transaction history. Operationally, the platform must remain resilient under varying network conditions and device constraints, ensuring seamless access for users in both high- and low-connectivity areas. A layered architecture—combining local data caching, real-time synchronization, and cloud-based analytics—balances performance with scalability. This approach enables efficient rentals, secure payments, and transparent data handling while fostering an ecosystem of trust, sustainability, and responsible consumption.

**Literature Survey:**

**1. Foroozanfar, M. H. et al. (2025). *A sustainability perspective for sharing economy business.***
Examines how attitude toward sharing economy, subjective norms, perceived behavioural control influence behavioural intention to use sharing platforms. Adds "technical characteristics" as an influencing factor. The study highlights how attitudes toward environmental protection, subjective norms (social influence), and perceived behavioral control significantly influence users' intentions to engage in sharing or renting platforms. Moreover, it emphasizes that **past experience** with collaborative consumption reinforces trust and future engagement. For ShareMate, these findings suggest the importance of promoting sustainability as a **core emotional driver**. Displaying eco-impact metrics (e.g., "You saved 3kg of e-waste by renting") can shape user attitudes. [1]

**2. Rathnayake, I., Ochoa, J., Gu, N., Rameezdeen, R., Statsenko, L., & Sandhu, S. (2024). Strategies for enhancing sharing economy practices across diverse industries: A systematic.review.*Sustainability,16*(20),9097**
This study explores how to achieve efficient and trustworthy matching between lenders and renters in a digital marketplace when product demand exceeds availability. It integrates user satisfaction, trust, and platform transparency into the matching process using a user-centric recommendation approach. The research also examines trade-offs between fairness, transaction speed, and overall system efficiency in peer-to-peer rental environments.

**3. Vasil, M., Chopdar, P. K., Buhalis, D., & Das, S. S. (2024). Value co-creation in the sharing economy: Revisiting relationships between platform, users, and resources. *.Journal of Contemporary Hospitality Management***
This paper *"Value Co-creation in the Sharing Economy: Revisiting Relationships between Platform, Users, and Resources"* explore how collaboration between platforms, users, and shared resources drives value creation in sharing economy ecosystems. The study emphasizes the importance of trust, engagement, and technology-enabled interaction in enhancing user satisfaction and loyalty. It highlights that value co-creation is a continuous process influenced by user participation, platform design, and perceived benefits.forms [3]

**4. Zarifis, A., Cheng, X., & Kroenung, J. (2024). Collaborative consumption for low and high trust requiring business models. *Journal of Business Research*)**
In their study *"Collaborative Consumption for Low and High Trust Requiring Business Models"* examine how different sharing economy platforms manage **trust and collaboration** between users. The paper differentiates between business models that require high trust (like peer-to-peer rentals) and those needing lower trust (like platform-managed services)..[4]

**5. Akadji, I., Marliani, G., & Laksono, M. A. (2024). The impact of trust in platform providers on user participation and economic benefits in the sharing economy. *Sustainability, 16*(18), 9097**
This paper*"The Impact of Trust in Platform Providers on User Participation and Economic Benefits in the Sharing Economy"* analyze how trust in platform providers influences user engagement and economic outcomes. The study finds that users are more likely to participate actively when platforms demonstrate transparency, security, and reliability. It also highlights that higher trust levels lead to stronger economic benefits for both users and platform operators.[5]

**6. Tjokrosaputro, M. (2024). Value co-creation in the sharing economy platform: The role of**

**ethical perceptions.** ***International Journal of Contemporary Hospitality Management***
This research *Role of Ethical Perceptions"* investigates how ethical perceptions and responsible behavior influence value co-creation in sharing economy platforms. The study emphasizes that users are more willing to collaborate and share resources when platforms demonstrate ethical transparency, fairness, and accountability.[6]

**7. Du, Q. A. (2024). Governance technology in the sharing economy.** ***Journal of Open Innovation.Technology,.Market.and.Complexity***
the paper *"Governance Technology in the Sharing Economy"* explores how digital governance mechanisms—such as blockchain, smart contracts, and algorithmic regulation—enhance transparency, trust, and accountability in sharing economy platforms. The study highlights that effective governance technology reduces fraud, data misuse**,** and operational inefficiencies while improving user confidence. It also emphasizes the importance of balancing automation with ethical oversight to maintain fairness in platform operations.[7]

**8. Clemens, V. (2024). Multi-level value creation in the sharing economy.** ***Journal of Service Research*****.**
This paper in the paper *"Multi-level Value Creation in the Sharing Economy"* examines how value is generated across multiple levels individual, platform, and societal within sharing economy ecosystems. The study explains that user participation, platform innovation, and community benefits collectively drive economic, social, and environmental value. It emphasizes the interconnected roles of users, service providers, and technology in sustaining platform growth.[8]

**9. Guttentag, D., Smith, S., & Li, F. (2024). Trust and reputation mechanisms in peer-to-peer.sharing.platforms.*****Journal.of.Business****.**
This study in the paper *"Trust and Reputation Mechanisms in Peer-to-Peer Sharing Platforms"* examine how trust and reputation systems influence user participation and engagement in peer-to-peer sharing platforms. The study highlights that features such as user ratings, reviews, verification processes, and transparent feedback mechanisms are critical for building confidence among participants. It also emphasizes that strong reputation mechanisms help reduce perceived risk, encourage repeated usage, and strengthen platform sustainability.[9]

**10.Kou, Y., Chen, J., & Li, C. (2018). Incentive mechanisms for crowdsourcing platforms: A survey.** ***ACM Computing Surveys, 51*****(1)**
This study in the paper *"Incentive Mechanisms for Crowdsourcing Platforms: A Survey"* explore various incentive strategies designed to encourage user participation and contribution in crowdsourcing and sharing platforms. The study categorizes incentives into monetary rewards, reputation points, gamification, and social recognition, and analyzes their effectiveness in motivating engagement. It highlights that carefully designed incentive mechanisms can increase user activity, improve content quality, and sustain platform growth.[10]

**Research Gap**
Existing literature on sharing economy platforms highlights adoption drivers, trust mechanisms, and resource optimization strategies, but lacks an integrated approach tailored specifically for Indian/local second-hand rental markets.
While trust, reputation, and verification mechanisms are widely discussed, there is no standardized framework for categorizing items by risk level (high-trust vs low-trust) and linking them to verification, deposits, or insurance policies in local marketplaces.
Existing research addresses value co-creation and user engagement but rarely combines these insights with operational governance, moderation, and platform playbooks for local community contexts, leaving adoption strategies underexplored.
Incentive schemes for sharing economy platforms are studied in terms of rewards and loyalty, but scalable, fraud-resistant, and privacy-preserving mechanisms for small-scale local exchanges remain largely untested.

**Problem Statement**
Fragmented local marketplaces, low trust between users, and inconsistent verification mechanisms cause inefficient item rentals, disputes, and low user engagement in second-hand sharing platforms. A unified, scalable platform is needed with risk-based verification, transparent reputation and rating systems, fraud-resistant incentives, and streamlined onboarding workflows to enable timely, trustworthy, and efficient peer-to-peer item rentals.

**Conclusion**
We conclude that, while significant advances exist

in sharing economy platforms, trust mechanisms, and incentive design, the main challenge lies in integrating these elements into a unified, user-friendly platform tailored for diverse local communities in India. A successful system must combine risk-based item verification, transparent reputation and rating systems, scalable fraud-resistant incentives, and streamlined onboarding workflows. By addressing these gaps, ShareMate can deliver a practical, trustworthy, and efficient second-hand rental ecosystem that enhances user engagement, ensures safe transactions, and fosters a strong sense of community participation.

**References**

Foroozanfar, M. H. et al. (2025). *A sustainability perspective for sharing economy business* https://www.researchgate.net/publication/389496638_A_sustainability_perspective_for_sharing_economy_business_model_and_its_unintended_effects

Rathnayake, I., Ochoa, J., Gu, N., Rameezdeen, R., Statsenko, L., & Sandhu, S. (2024). Strategies for enhancing sharing economy practices across diverse industries: A systematic.review.*Sustainability,16*(20),9097.https://doi.org/10.3390/su16209097

Vasil, M., Chopdar, P. K., Buhalis, D., & Das, S. S. (2024). Value co-creation in the sharing economy: Revisiting relationships between platform, users, and resources. *Journal of Contemporary Hospitality Management*. https://doi.org/10.1108/IJCHM-01-2024-0045

Zarifis, A., Cheng, X., & Kroenung, J. (2024). Collaborative consumption for low and high trust requiring business models. *Journal of Business Research*. https://doi.org/10.1016/j.jbusres.2024.04.001

Akadji, I., Marliani, G., & Laksono, M. A. (2024). The impact of trust in platform providers on user participation and economic benefits in the sharing economy. *Sustainability, 16*(18), 9097.https://doi.org/10.3390/su16209097

Tjokrosaputro, M. (2024). Value co-creation in the sharing economy platform: The role of ethical perceptions. *International Journal of Contemporary Hospitality Management*. https://doi.org/10.1108/IJCHM-01-2024-0045

Du, Q. A. (2024). Governance technology in the sharing economy. *Journal of Open Innovation.Technology,.Market.and.Complexity*.https://doi.org/10.3390/joitmc6040159

Clemens, V. (2024). Multi-level value creation in the sharing economy. *Journal of Service Research*.https://doi.org/10.1177/10946705241229423

Guttentag, D., Smith, S., & Li, F. (2024). Trust and reputation mechanisms in peer-to-peer.sharing.platforms.*Journal.of.Business.Research*.https://doi.org/10.1016/j.jbusres.2024.04.001

Kou, Y., Chen, J., & Li, C. (2018). Incentive mechanisms for crowdsourcing platforms: A survey. *ACM Computing Surveys, 51*(1), 1–34https://doi.org/10.1145/3148148