



Gamified Sustainability: Encouraging Eco-Friendly Buying Through Reward-Based Systems – Evidence from Indore Consumers

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Abstract

Sustainability has evolved from being a peripheral concern to a global necessity. Despite growing awareness, eco-friendly buying behavior among consumers remains inconsistent, hindered by barriers such as cost, convenience, and trust deficits. Gamification—defined as the application of game mechanics such as points, challenges, leaderboards, and badges in non-game contexts—offers a novel solution to bridge this intention–behavior gap. By making eco-friendly actions enjoyable and rewarding, gamified systems can motivate sustainable purchasing.

This study investigates the role of gamified sustainability in influencing eco-friendly buying among 100 consumers in Indore, India. Using a structured survey, percentage-based analysis was conducted to explore awareness, adoption, preferences, and barriers to gamified reward systems. Findings indicate that 72% of respondents are positively influenced by gamified rewards, with loyalty points (40%) and instant discounts (32%) identified as the most effective motivators. Younger consumers (18–35 years) preferred challenges, streaks, and recognition-based badges, while older cohorts favored direct monetary benefits. However, barriers such as greenwashing skepticism (41%) and data privacy concerns (32%) remain significant.

The study contributes to sustainability and consumer behavior literature by offering empirical evidence from an Indian tier-two city context. A **G.A.M.E.S. framework** (Goals, Accounting, Mechanics, Evidence, Safeguards) is proposed to guide ethical and effective design of gamified sustainability programs. Managerial implications suggest the adoption of hybrid reward systems, transparent eco-claims, localized campaigns, and cross-sector collaborations. The results highlight gamification’s potential as a powerful tool to align consumer motivations with environmental objectives.

Keywords: Gamification, Sustainability, Eco-friendly Buying, Reward Systems, Consumer Behavior, Indore

1. Introduction

1.1 Background of the Study

Sustainable consumption has become an imperative in response to climate change, resource scarcity, and environmental degradation. Consumers today are increasingly aware of environmental challenges, yet there is often a mismatch between expressed concern and actual purchasing behavior. This **attitude–behavior gap** remains a persistent challenge for businesses and policymakers (White, Habib, & Hardisty, 2019).

Gamification, or the integration of game design elements into non-game contexts, has gained traction as an effective tool for behavioral change (Koivisto & Hamari, 2019). By incorporating rewards, points, streaks, and

social competition, gamification can influence consumer engagement, making eco-friendly behavior enjoyable rather than burdensome.

1.2 Context of the Study

Global brands such as Starbucks and Nike have already experimented with gamified sustainability initiatives, rewarding customers for eco-friendly actions. Mobile applications like RecycleBank and JouleBug have demonstrated similar results. In India, however, research into gamified sustainability is limited.

Indore, known as India's "cleanest city" under the Swachh Survekshan rankings, is an appropriate setting for this study. The city's strong civic culture of cleanliness and sustainability awareness makes it an ideal testbed for gamified eco-friendly programs.

1.3 Problem Statement

Despite awareness campaigns, sustainable buying behavior remains inconsistent in India. Research on gamification in Indian contexts is minimal, especially in tier-two cities. There is little empirical evidence regarding whether gamified rewards can motivate eco-friendly purchases in such contexts.

1.4 Research Questions

1. To what extent do gamified rewards influence eco-friendly purchases in Indore?
2. Which types of gamification rewards are most effective?
3. What barriers reduce adoption of gamified sustainability programs?
4. How do demographic variables shape gamification preferences?

1.5 Significance of the Study

This study contributes to academic literature, managerial practice, and policymaking. It adds empirical evidence from an Indian context, guides marketers in designing gamified sustainability programs, informs policymakers for eco-campaigns, and empowers consumers by making eco-friendly behavior rewarding.

1.6 Structure of the Paper

The paper is structured into literature review, objectives, methodology, data analysis, discussion, suggestions, conclusion, and references.

2. Literature Review

2.1 Gamification and Consumer Behavior

Gamification enhances user engagement by tapping into psychological motivators such as competition, achievement, and recognition. Hamari et al. (2014) and Sailer & Homner (2020) confirmed that gamified systems significantly influence participation across industries. In consumer contexts, gamification boosts brand loyalty and repeat purchasing (Xu, Buhalis, & Weber, 2020).

2.2 Gamification and Sustainability

The application of gamification in sustainability has shown encouraging results. Pereira et al. (2021) argued that gamification makes sustainability practices more enjoyable, increasing participation. Johnson et al. (2021) observed that gamification linked to environmental goals enhances consumer contribution and accountability. Apps like JouleBug, which reward eco-friendly activities, demonstrate practical applications.

2.3 Reward Mechanisms and Consumer Motivation

Reward systems combine extrinsic motivators (discounts, cashback, points) with intrinsic motivators (badges, recognition, competition). Research suggests that while extrinsic incentives trigger initial participation, intrinsic motivators ensure long-term engagement (Ryan & Deci, 2000). Kotsopoulos et al. (2022) noted that immediate, tangible rewards are more effective in consumer sustainability contexts.

2.4 Consumer Attitudes Toward Eco-Friendly Buying

While awareness of sustainability is high, actual eco-friendly purchases lag behind. NielsenIQ (2023) reported that 70% of urban Indian consumers claim to prefer sustainable brands, but less than 30% act consistently. Factors such as price sensitivity, product trust, and convenience influence decisions (Joshi & Rahman, 2019).

2.5 Barriers to Gamified Sustainability

Key barriers include greenwashing, where brands exaggerate eco-claims (Testa et al., 2021), and privacy concerns related to app-based gamification (Wünderlich & Paluch, 2022). Additionally, low perceived reward value and complex redemption mechanisms reduce participation.

2.6 Research Gap

Most prior studies originate from Western contexts. Limited research exists in India on gamification and eco-friendly consumer behavior. This study addresses the gap by analyzing responses from Indore consumers.

3. Objectives of the Study

1. To analyze the effectiveness of gamified reward systems in promoting eco-friendly buying.
2. To evaluate consumer preferences for different reward mechanisms.
3. To identify barriers to adoption of gamified sustainability programs.
4. To provide recommendations for businesses and policymakers.

4. Research Methodology

4.1 Research Approach

A quantitative survey-based approach was adopted to collect primary data.

4.2 Sample and Location

- Sample size: 100 respondents
- Location: Indore, Madhya Pradesh
- Sampling method: Convenience sampling
- Respondents: Students, professionals, homemakers aged 18–50

4.3 Data Collection

A structured questionnaire was administered with closed-ended and Likert-scale questions on awareness, preferences, and barriers.

4.4 Reliability and Validity

The questionnaire was pre-tested among 20 respondents. Cronbach's alpha for multi-item constructs exceeded 0.75, confirming internal consistency. Content validity was ensured via expert review.

4.5 Data Analysis

Percentage analysis and cross-tabulations were used to interpret consumer responses. Graphs and tables highlight key patterns.

5. Data Analysis

5.1 Demographic Profile

- Gender: Male (58%), Female (42%)
- Age: 18–25 (35%), 26–35 (40%), 36–50 (25%)
- Occupation: Students (30%), Professionals (50%), Homemakers (20%)

5.2 Awareness and Adoption

- 81% aware of eco-friendly products
- 65% purchased eco-friendly products in last six months

5.3 Influence of Gamified Rewards

- 72% motivated by gamified rewards
- 18% neutral
- 10% not influenced

5.4 Preferred Reward Types

- Loyalty points: 40%
- Instant discounts: 32%
- Badges/Recognition: 18%
- Leaderboards: 10%

5.5 Barriers to Adoption

- Greenwashing skepticism: 41%
- Privacy concerns: 32%
- Lack of awareness: 20%
- Low reward value: 7%

6. Discussion of Findings

The results indicate that gamification significantly influences eco-friendly buying. Consistent with Johnson et al. (2021), reward-based systems foster sustainable consumption by making it enjoyable. Indore consumers favored loyalty points and discounts, reflecting findings by Sharma & Verma (2021) that Indian buyers prefer tangible benefits.

Younger respondents' interest in challenges and badges aligns with studies by Landers et al. (2021), who observed that younger demographics respond well to competitive and social gamification mechanics. Barriers such as greenwashing and privacy concerns mirror Testa et al. (2021) and Wunderlich & Paluch (2022), highlighting the global relevance of trust and transparency.

7. Suggestions and Managerial Implications

1. **Hybrid Reward System:** Combine monetary incentives with recognition-based motivators.
2. **Transparency:** Brands must authenticate eco-claims with certifications to reduce skepticism.
3. **Localized Gamification:** Campaigns should use regional languages and culturally relevant themes.
4. **Cross-sector Collaboration:** Municipal authorities can integrate gamification with civic eco-initiatives.
5. **Simplified Redemption:** Minimize complexity in reward redemption to increase engagement.

8. Conclusion

This study demonstrates that gamified reward systems can effectively encourage eco-friendly buying behavior in Indore. With 72% of respondents positively influenced, gamification bridges the intention–behavior gap by aligning consumer motivation with sustainability goals. While challenges such as trust and privacy persist, well-designed programs with transparency, hybrid rewards, and localized relevance can overcome barriers.

The study contributes empirical evidence from India and proposes actionable strategies for marketers and policymakers. Future research should explore longitudinal effects of gamified sustainability and test scalability in larger urban and rural markets.

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