



---

## ENHANCING HOUSEHOLD SUSTAINABILITY THROUGH REUSABLE PACKAGING: A COMMUNITY-BASED APPROACH TO REDUCING PLASTIC WASTE IN THE GREATER JAKARTA AREA

By

Bintang Ekananda<sup>1</sup>, Anif Farida<sup>2</sup>, Faridz Abdul Chalid Macap<sup>3</sup>

<sup>1,2,3</sup>Universitas Muhammadiyah Sorong

E-mail: <sup>1</sup>[bintangekananda@gmail.com](mailto:bintangekananda@gmail.com)

---

### Article History:

Received: 11-12-2024

Revised: 27-12-2024

Accepted: 14-01-2025

### Keywords:

Reusable Packaging Systems,

Plastic Waste Reduction,

Circular Economy,

Sustainable Consumption

**Abstract:** *Plastic pollution is a critical global issue, with single-use plastic packaging contributing significantly to environmental degradation. This study examines the impact of Alner's reusable packaging system in reducing household plastic waste and promoting sustainable consumption behaviors in Greater Jakarta. Using a mixed-methods approach, data was collected through a survey of 99 respondents and Focus Group Discussions (FGDs) with seven homemakers. Findings revealed that Alner's system reduced household plastic waste by 138 units of single-use packaging per month and provided users with a 15% reduction in grocery expenses. Behavioral drivers, such as peer influence, convenience, and cost savings, played a pivotal role in encouraging the adoption of reusable systems, while deeper psychological motivations reinforced users' commitment to sustainability. The study also identified opportunities for Alner to scale its impact by expanding product offerings, enhancing logistics, and leveraging community engagement. These findings underscore the potential of reusable packaging systems to address plastic pollution, foster economic and environmental benefits, and inspire a global shift toward circular consumption practices.*

---

## INTRODUCTION

Plastic pollution has become a critical global environmental issue, with an estimated 400 million tons of plastic produced annually, of which only 9% is recycled. Single-use plastic packaging contributes significantly to this problem, making up 40% of the total plastic waste generated globally (Geyer, Jambeck, & Law, 2017). Indonesia, as the world's second-largest contributor to marine plastic pollution, faces a growing challenge to reduce waste and promote sustainable consumption practices (Jambeck et al., 2015). Addressing these issues requires innovative approaches, such as reusable packaging systems, to encourage behavioral shifts toward sustainable consumption.

Alner's reusable packaging initiative offers a practical solution to minimize plastic waste in households, particularly in urban areas like Greater Jakarta. By introducing refillable



containers and sustainable shopping practices, Alner has demonstrated a measurable reduction in single-use plastic consumption among its users. This study examines the environmental and economic impacts of Alner's system, exploring changes in user behavior and identifying opportunities for improvement. It highlights the potential of such community-driven initiatives to scale and address broader sustainability challenges in developing countries (Ellen MacArthur Foundation, 2016).

## METHOD

This study employed a mixed-methods approach to comprehensively examine the impact of Alner's reusable packaging system on user behavior and household waste reduction. The quantitative component involved a structured survey conducted with 99 respondents, focusing on their demographic and psychographic profiles, purchasing habits, and environmental concerns. To complement these findings, a qualitative approach was utilized through Focus Group Discussions (FGDs), engaging seven homemakers who actively use Alner's services. These FGDs provided in-depth insights into users' motivations, challenges, and suggestions for improving Alner's system.

The integration of both methods ensured a holistic understanding of user experiences, leveraging triangulation to validate findings (Creswell & Plano Clark, 2017). The respondents were Alner's customers, who learned about the service through various interventions, such as community outreach during RT/RW gatherings (neighborhood-level community meetings in Indonesia), waste bank meetings, and Alner's social media platforms like Instagram.

## RESULT

Alner users are predominantly women and mothers, averaging 35 years old, who have the time to manage household shopping and waste. Most users allocate between 1.5 million and 3 million IDR per month for groceries, with dishwashing liquid and detergent being the most frequently purchased products.

The study revealed that Alner's reusable packaging system significantly reduces household plastic waste. Before adopting the system, users generated an average of 138 units of single-use 600mL plastic bottles per month. These bottles have now been replaced with reusable containers, preventing 138 units of single-use plastic from entering waste streams each month. This impact is achieved by users returning empty containers to Alner, where they are cleaned, sanitized, and refilled, effectively eliminating the need for single-use plastic packaging.

Additionally, users reported a 15% reduction in household shopping expenses, highlighting the system's cost-effectiveness. These findings demonstrate that Alner's model not only promotes sustainable practices by reducing plastic waste but also provides significant economic benefits to its users.

## DISCUSSION

The results underscore the transformative potential of reusable packaging systems like Alner's in reducing plastic waste and fostering sustainable consumption behaviors. By replacing 138 units of single-use packaging monthly, Alner users achieved a significant reduction in their environmental footprint. This shift was facilitated by Alner's system of container returns, cleaning, and refilling, which simplifies and incentivizes sustainable



practices for consumers. The effectiveness of this system is consistent with prior studies highlighting the environmental benefits of transitioning from single-use to circular models, which mitigate resource extraction, reduce waste generation, and promote resource efficiency (Ellen MacArthur Foundation, 2016; Geyer, Jambeck, & Law, 2017).

### **Behavioral Drivers Behind Waste Reduction**

A key factor in the reduction of single-use packaging among Alner's users is the behavioral change encouraged by the system's design. Alner's returnable container model eliminates barriers to sustainable consumption by embedding ease and convenience into the process. Users are not only provided with accessible return points but are also incentivized to engage through cost savings and environmental impact awareness. The reported 15% cost savings resonate with behavioral economics principles, where financial incentives serve as a catalyst for adopting new habits (Thaler & Sunstein, 2009). Similar evidence of cost incentives influencing pro-environmental behaviors has been documented in waste management programs worldwide (Schultz et al., 1995).

Moreover, peer influence and social dynamics appear to play a pivotal role in shaping consumer behavior. Many users were introduced to Alner through community gatherings, social media, and word-of-mouth recommendations, which fostered a sense of collective responsibility and accountability. Research shows that individuals are more likely to adopt sustainable practices when they observe peers successfully implementing similar changes (Cialdini, Reno, & Kallgren, 1990). By normalizing the practice of returning and refilling containers, Alner has cultivated a community of environmentally conscious consumers, who, in turn, inspire others within their social networks to follow suit.

### **Social and Psychological Motivations**

The shift to reusable packaging also aligns with deeper psychological motivations, such as the desire for identity alignment and meaningful action. For many consumers, participating in Alner's system reinforces their identity as responsible and eco-conscious individuals, enhancing their self-perception and social standing within their communities. This is particularly relevant for women and mothers, who dominate Alner's user base and often take on roles as household decision-makers and sustainability advocates. Their actions not only reduce household waste but also model sustainable behavior for their families and communities, amplifying the system's impact (Ajzen, 1991; Barr, Gilg, & Shaw, 2011).

### **Opportunities for Scaling and Innovation**

The findings also point to opportunities for innovation and growth in reusable packaging systems. The demand for greater product variety indicates that consumers are ready to integrate sustainable practices across a broader range of household needs. Expanding product offerings, particularly for high-frequency items, can deepen user engagement and foster long-term loyalty.

Additionally, addressing logistical challenges, such as improving delivery efficiency and establishing more return points, can remove friction points and encourage broader participation. Strategic collaborations with local communities, waste banks, and peer networks could further enhance system accessibility while leveraging the power of social influence to drive behavioral change.

### **A Pathway to Global Adoption**

The dual benefits of economic savings and environmental impact reduction



demonstrate the scalability and global relevance of reusable systems like Alner's. Urban areas, which typically generate higher levels of waste, represent fertile ground for implementing such models. With targeted investments, user-centered design, and leveraging the influence of peer networks, reusable packaging systems can catalyze a global shift toward sustainable consumption.

Ultimately, the success of Alner's model showcases how integrating behavioral insights, community engagement, and operational efficiency can create a powerful solution to the plastic waste crisis. By addressing both the practical and psychological dimensions of consumer behavior, reusable packaging systems have the potential to set a new benchmark for sustainability, inspiring change across industries and regions (Miao et al., 2023).

## CONCLUSION

The adoption of Alner's reusable packaging system demonstrates significant potential in reducing household plastic waste and promoting sustainable consumer behavior. By transitioning from single use to reusable packaging, users were able to prevent 138 units of single use plastic packaging per month, showcasing the environmental benefits of such systems. Additionally, the 15% cost savings reported by users underscore the economic value of Alner's approach, making it both an environmentally and financially sustainable solution for urban households.

Moving forward, the findings highlight opportunities for Alner to enhance its impact. Expanding product variety, improving logistics for delivery and packaging returns, and addressing usability challenges can further solidify Alner's position as a leader in reusable packaging. By leveraging these insights, Alner can not only scale its operations but also inspire broader adoption of circular systems, contributing to global efforts in reducing plastic waste and achieving sustainability goals. This study reinforces the importance of integrating user feedback into the refinement of sustainable solutions for long-term success.

## ACKNOWLEDGEMENTS

We extend our gratitude to the Alner team, the Labtek Indie team, and the Environmental Engineering Department of Universitas Muhammadiyah Sorong for their supports.

## REFERENCES

- [1] Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211.
- [2] Barr, S., Gilg, A., & Shaw, G. (2011). Helping people make better choices: Exploring the behaviour change agenda for environmental sustainability. *Applied Geography*, 31(4), 712–720.
- [3] Cialdini, R. B., Reno, R. R., & Kallgren, C. A. (1990). A focus theory of normative conduct: Recycling the concept of norms to reduce littering in public places. *Journal of Personality and Social Psychology*, 58(6), 1015–1026.
- [4] Ellen MacArthur Foundation. (2016). *The New Plastics Economy: Rethinking the Future of Plastics*. Ellen MacArthur Foundation.
- [5] Geyer, R., Jambeck, J. R., & Law, K. L. (2017). Production, use, and fate of all plastics ever made. *Science Advances*, 3(7), e1700782. <https://doi.org/10.1126/sciadv.1700782>



- 
- [6] Jambeck, J. R., Geyer, R., Wilcox, C., Siegler, T. R., Perryman, M., Andrady, A., Narayan, R., & Law, K. L. (2015). Plastic waste inputs from land into the ocean. *Science*, 347(6223), 768–771. <https://doi.org/10.1126/science.1260352>
- [7] Miao, X., Zhu, Q., Wang, T., & Tang, Z. (2023). Consumers' perceptions of refillable and returnable packaging systems: A sustainable packaging perspective. *Springer Proceedings in Business and Economics*. [https://doi.org/10.1007/978-981-99-3818-6\\_2](https://doi.org/10.1007/978-981-99-3818-6_2)
- [8] Schultz, P. W., Oskamp, S., & Mainieri, T. (1995). Who recycles and when? A review of personal and situational factors. *Journal of Environmental Psychology*, 15(2), 105–121. [https://doi.org/10.1016/0272-4944\(95\)90019-5](https://doi.org/10.1016/0272-4944(95)90019-5)
- [9] Thaler, R. H., & Sunstein, C. R. (2009). *Nudge: Improving Decisions About Health, Wealth, and Happiness*. Penguin Books.



THIS PAGE IS INTENTIONALLY LEFT BLANK