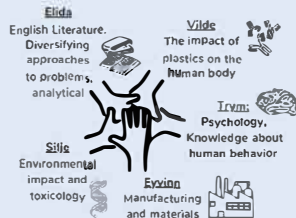


EXPLORING SUSTAINABLE SOLUTIONS FOR A GREEN LIFECYCLE IN THE CIRCULAR ECONOMY OF PLASTIC



INTERDISCIPLINARY



CHALLENGES

Single-use plastics account for 40 percent of the plastic produced every year¹. Many of these products, such as plastic containers have a short lifespan, yet they can persist in the environment for hundreds of years¹. The amount of plastic released into the environment has rapidly increased in the past years, disrupting all forms of life².

Household containers, including soap containers, rank as the fourth most frequently found items during beach cleanups in Norway³. Hand soap, shampoo and conditioner are products we use several times a week, and when we need a new one, it is most convenient to go for the most available option - buy a new plastic container with soap at the local grocery store. Different manufacturers use different plastic materials for the soap containers, thus inhibiting effective recirculation⁴.

What can we do to change the behavior of manufacturers to choose containers of more recyclable materials or alternative options? And what are the consumer attitudes towards refillable options?

OUR GOALS

The aim of this project is to investigate the life cycle of soap containers and identify how and where actions can be taken to reduce plastic use or transition to more sustainable packaging materials.

To do this, we explore different steps in the product lifecycle of soap containers and identify barriers that must be overcome for manufacturers to choose more recyclable materials.

Additionally, we investigate consumer habits and attitudes towards refillable options.

METHOD

INTERVIEW
Pant system
Manufacturer
Plastic recycler
Refill store

SURVEY
Target group: students

FIELDSTUDY
Investigation of availability in store
Material and packaging

INFINITUM

Orkla
Ogoori

Results

Refill station

No problems for big quantities on the production side.
90% of our participants in the survey said they were willing to use soap refill stations.
Consumers feedback for use;

- price
- clean
- ensuring hygiene
- ease of use

Refill packaging

Cardboard refill packages
Less plastic with refill bags (plastic material) up to 80% less plastic.
Difficulties with recycling and sorting for consumers, ending up in wrong trashcan.
Soap residue in empty containers can also cause problems when disposed.

Material

Durability
Cardboard
Difficult recycling for consumers
Design and production with recyclable plastic material is the smallest problem

Pant

Requires cooperation from grocery stores.
Changing consumer behavior.
Material

THEORETICAL BACKGROUND

Steg & Vlek presents a framework for designing behavior interventions⁵. It consists of four steps, including identification of behaviors, identification of barriers and underlying factors, intervention design and evaluation of its effectiveness⁶.

The product life cycle is a model of the different stages in a products life, including raw material, design, manufacturing and disposal or recycling⁷. The stages of the life cycle interconnect, making the cycle complex⁸.

DISCUSSION

Our main discovery from this investigation is the dense complexity and heavy investment structures laying behind the existing solutions and that although there is a strong will and openness to refillable options and refill stations, the main barriers is to our understanding relying on the grocery stores. This is also the case with pant system but also the variety of materials used necessitates sorting after panting. Manufacturers did have the impression that cardboard is expected by the market and that the solution is efficient because the customers are already familiar with the use and handling of the cardboard packaging. Orkla states that some soaps are incompatible with environmentally friendly packaging alternatives, which rules out cardboard as a solution for these products.

Grocery stores should price refills lower, firstly, because producers sell the same quantity prices on different brands. However, stores still decide the final price on the shelf. Secondly, the consumers have price as their main factor for evaluating the product. However, since the target group for the study was students, price as the main factor may not be representative of a targeted population that has the biggest impact on the use of plastic detergents. Also, prices on the production chain level can fluctuate based on economic fluctuations, and the sustainable solution becomes less lucrative for companies to have as a competitive advantage.

CONCLUSION

Our results shows that consumers (students) already use refillable options, and would be willing to use refill stations in grocery stores if the option was available. The most important factors for consumer adoption of refill stations include price, user-friendliness and availability.

Manufacturers are also able and willing to supply their products in larger quantities.

The main barrier for making refillable stations a reality lies with the grocery stores, as they would be responsible for daily operation and maintenance of a refill station.

FUTURE WORK

- Research habits of other target groups that are more demographically representative.
- Ask grocery stores if they would be willing to implement this kind of idea.
- Develop the proposed solution, conduct trials and evaluate results.
- Change the behavior of grocery stores to try refill stations

REFERENCES



SCAN HERE

