



TOMRA



How recycling habits impact shopping behavior

Consumer engagement with deposit return systems in Europe



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INTRODUCTION

Deposit return systems for drink container recycling are becoming more popular in response to the growth of plastic pollution and the demand for high-quality recycled material. In Europe, Slovakia and Latvia have recently introduced their own deposit return systems, while the Netherlands and Germany are expanding their existing systems.

With more European countries set to follow in their footsteps, TOMRA has commissioned a quantitative consumer study to understand decision criteria in choosing recycling locations, and trends in recycling behavior across seven European countries with “return-to-retail” deposit return systems. The study was conducted via online survey panels in Sweden, Norway, Finland, Denmark, Germany, the Netherlands and Slovakia, in November 2022. Each market surveyed 1000 consumers, aged 18-70 and returning drink containers for recycling at least every second month.

During our analysis, two sub-groups displayed different behavior and attitudes from the total study population and are therefore highlighted in the analysis: Young consumers (<30 years, representing 20% of the total sample) and high-volume recyclers (returning 50+ containers per occasion, representing 15% of the total sample). These sub-groups are also highlighted because they represent, respectively, the most eco-conscious consumers and the consumers that have the highest deposit refund per recycling trip.

This report was published for grocery retailers looking to better understand consumer recycling behavior, improve their reverse vending facilities, and leverage deposit return systems as an opportunity to drive traffic and loyalty to their store, all while making a difference to the environment and litter reduction in their local community.



What's a deposit return system?

A deposit return system (DRS) motivates people to recycle by placing a small deposit on the sale of beverages, which is refunded when consumers return the empty containers for recycling. An approach that has achieved impressive return rates is the “return-to-retail” model, where the stores selling beverages become legally responsible for accepting used containers for recycling. DRSs are typically established through legislation passed by state or national governments.

What's a reverse vending machine?

A reverse vending machine is a machine where people can return empty beverage containers, like bottles and cans, for recycling. These machines typically give back a deposit or refund amounts to the end user. This is what makes it a “reverse” vending machine: instead of the user putting in money and getting out a product (like at a candy vending machine), the user puts a product in and gets out a monetary value.



WHY CONSUMERS RECYCLE: DEPOSIT REFUNDS AND THE ENVIRONMENT ARE TOP REASONS TO RETURN CONTAINERS

Returning used drink containers for recycling has become an established habit for shoppers in all researched markets. Nearly all respondents (93%) return at least 90% of their household's total volume of eligible drink containers.

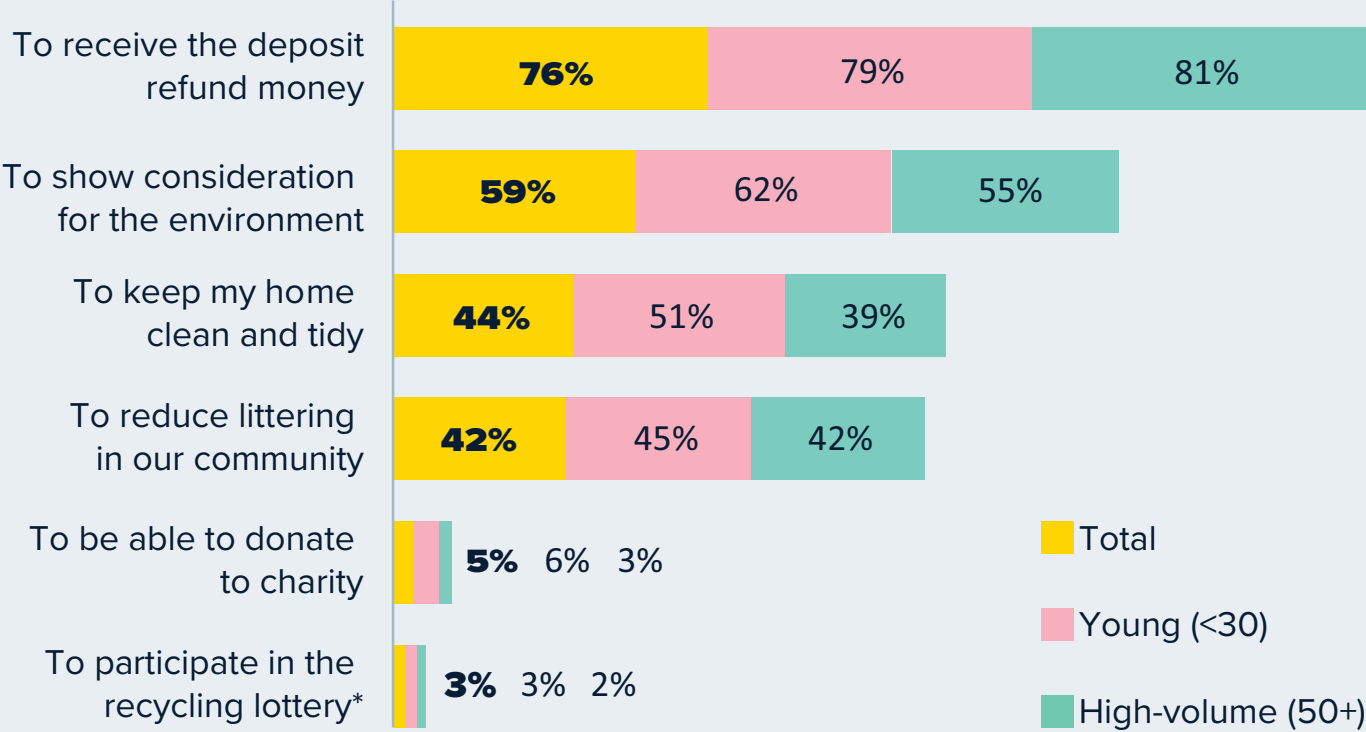
Consumers have different reasons to engage with deposit return systems. Not surprisingly, their main motivation is getting back the deposit paid on their drink containers (76% of respondents); however, consideration for the environment (59%) is also strong, followed by keeping their home tidy (44%) and reducing litter in the community (42%).

That environmental issues are especially close to the hearts of young people today was also confirmed in this study, where young recyclers to a greater extent state that consideration for the environment is a key driver to recycle (62% of young respondents, versus 59% for the total sample).

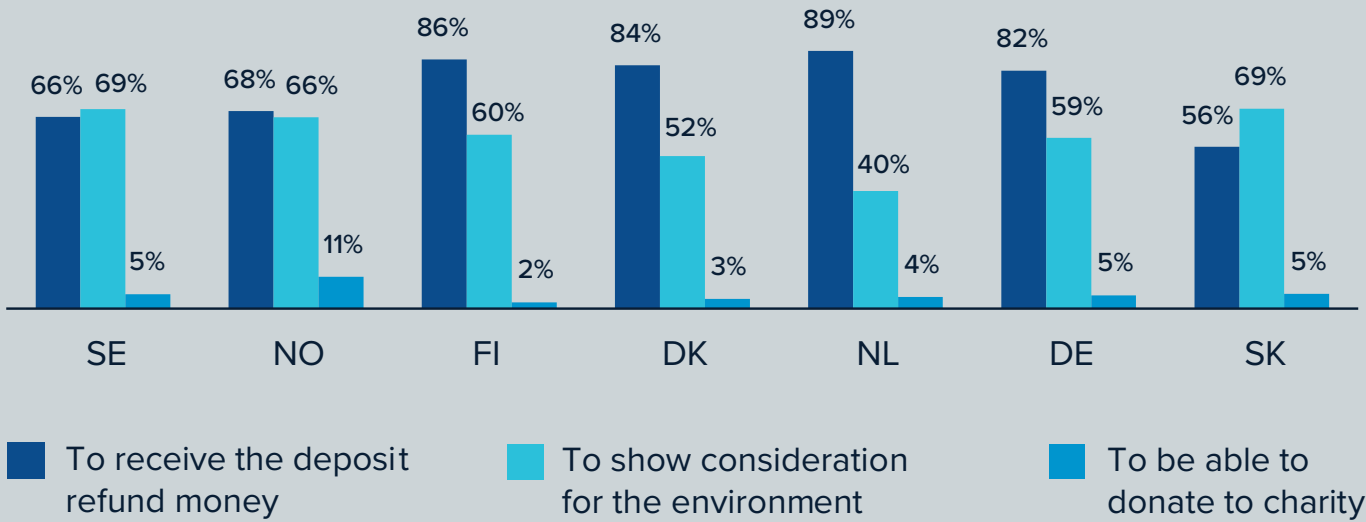
Looking at country differences, care for the environment is even more important in Sweden and Slovakia, where it is the number-one reason to return containers among all respondents. Donation to charity is more popular in Norway, thanks to its recycling lottery.*

*Consumers in Norway can use their deposit refund to enter a lottery draw when they return their containers to a reverse vending machine. The winner can receive up to 1 million NOK (~100,000 EUR), while a portion of the refund value from non-winning tickets goes to charity, and the remainder goes to the prize money and retail handling fees.

Reasons to recycle: Total and per sub-group



Top reasons to recycle per country





REASONS TO CHOOSE A STORE: QUALITY REVERSE VENDING IN TOP-THREE CRITERIA

To understand how consumers engage with deposit return systems, the study explored four topics: **choice of store**, **use of deposit refund**, **recycling frequency**, and **recycling volume**.

On average, 29% of consumers have two or more stores where they return used drink containers for recycling, showing that “recycling loyalty” follows a similar pattern to shopping loyalty - consumers select a given store to visit based on their needs (e.g., daily shop, stock-up, redeeming containers, etc).

When choosing where to return their drink containers, well-functioning reverse vending facilities* was the third-most important criteria (20%

of respondents), after the store being the one where they normally shop (31% of respondents) or a location close to home (26% of respondents).

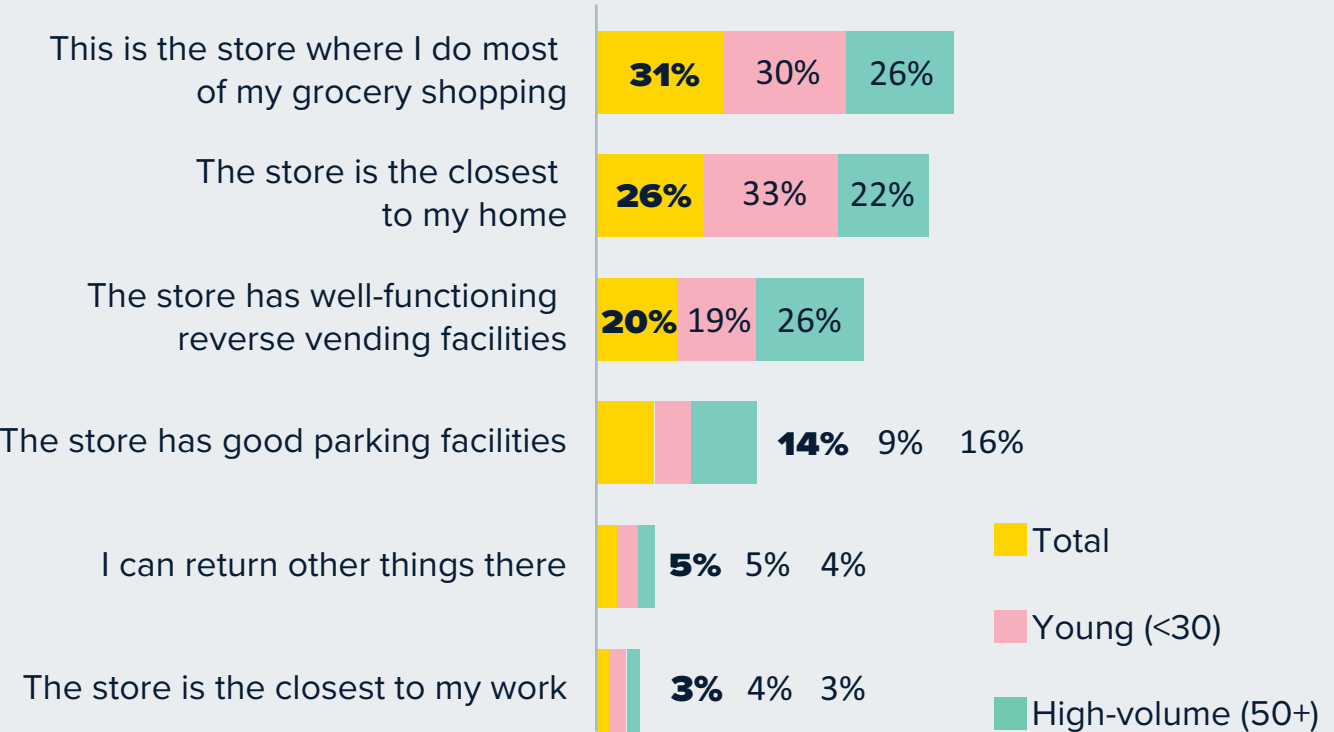
Easy parking (14%) and the possibility to return other used products (5%) both have a lower priority for consumers when choosing where to recycle.

For high-volume recyclers (returning 50+ containers each time) a well-functioning reverse vending area was actually the most important criteria.

Comparing countries, the Danish people attribute a greater importance to the quality of the store reverse vending facilities whereas people in the Netherlands, where fewer containers are returned per occasion compared to the other countries, see it as less important.

*Defined as the space inside or near a grocery store where the reverse vending machines are located, including the machines themselves and the surrounding area.

Reasons to choose a store for recycling: Total and per sub-group



Reasons to choose a store for recycling: Country comparison

	SE	NO	FI	DK	NL	DE	SK
This is the store where I do most of my grocery shopping	32%	29%	30%	27%	36%	30%	30%
The store is the closest to my home	25%	29%	25%	30%	29%	23%	26%
The store has well-functioning reverse vending facilities	22%	19%	21%	24%	12%	20%	19%
The store has good parking facilities	14%	14%	13%	13%	13%	16%	13%
I can return other things there	2%	6%	6%	2%	5%	5%	6%
The store is the closest to my work	2%	2%	2%	2%	2%	4%	7%
Other	2%	2%	3%	2%	3%	2%	0%



USE OF DEPOSIT REFUND: RECYCLERS SPEND THEIR REFUNDS IN STORE

In a deposit return system, consumers receive a deposit refund when they bring back their used drink containers to the store for recycling.

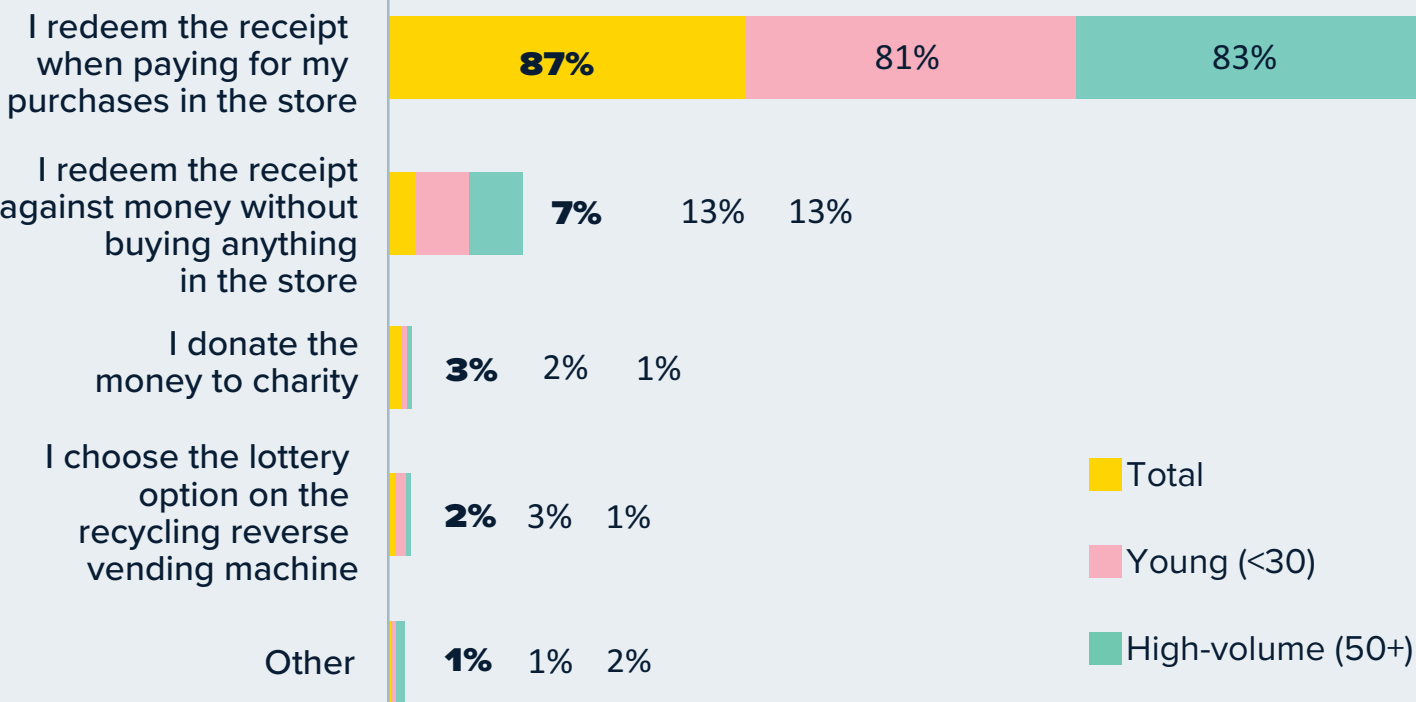
The study found that a whopping 87% of respondents put their deposit refund towards grocery purchases at the store where they return containers.

Slight variations in deposit refund usage are found between countries. Notably,

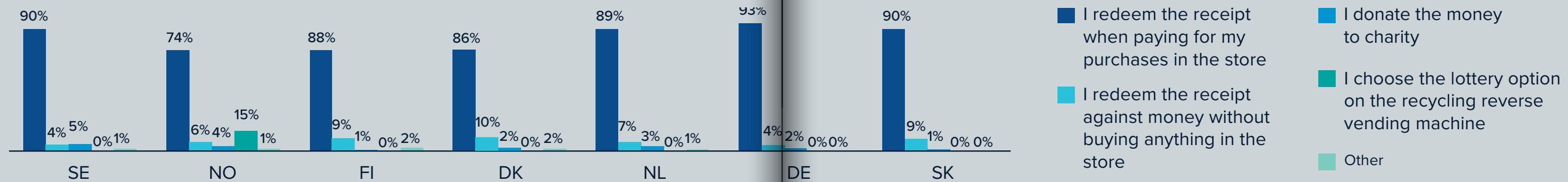
even more consumers use the deposit refund to pay for groceries in Germany (93%), while in Norway a large share choose to participate in the recycling lottery (15%).

Despite cashing out higher sums per recycling trip than the average respondent, most high-volume recyclers (83%) also choose to spend their deposit refund at the store where they return containers for recycling.

Use of deposit refund: Total and per sub-group



Use of deposit refund: Country comparison





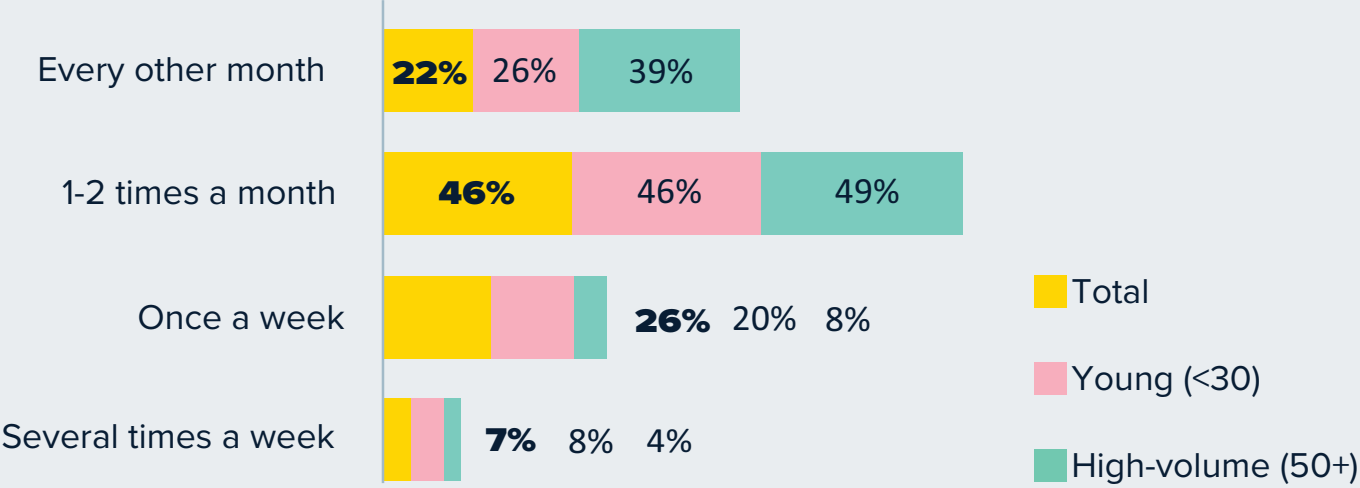
**RECYCLING FREQUENCY AND VOLUME:
MOST SHOPPERS RETURN UP TO 30
CONTAINERS, 1-2 TIMES PER MONTH**

The most common frequency for returning containers at a grocery store is 1-2 times per month (46% of respondents), followed by once a week (26% of respondents).

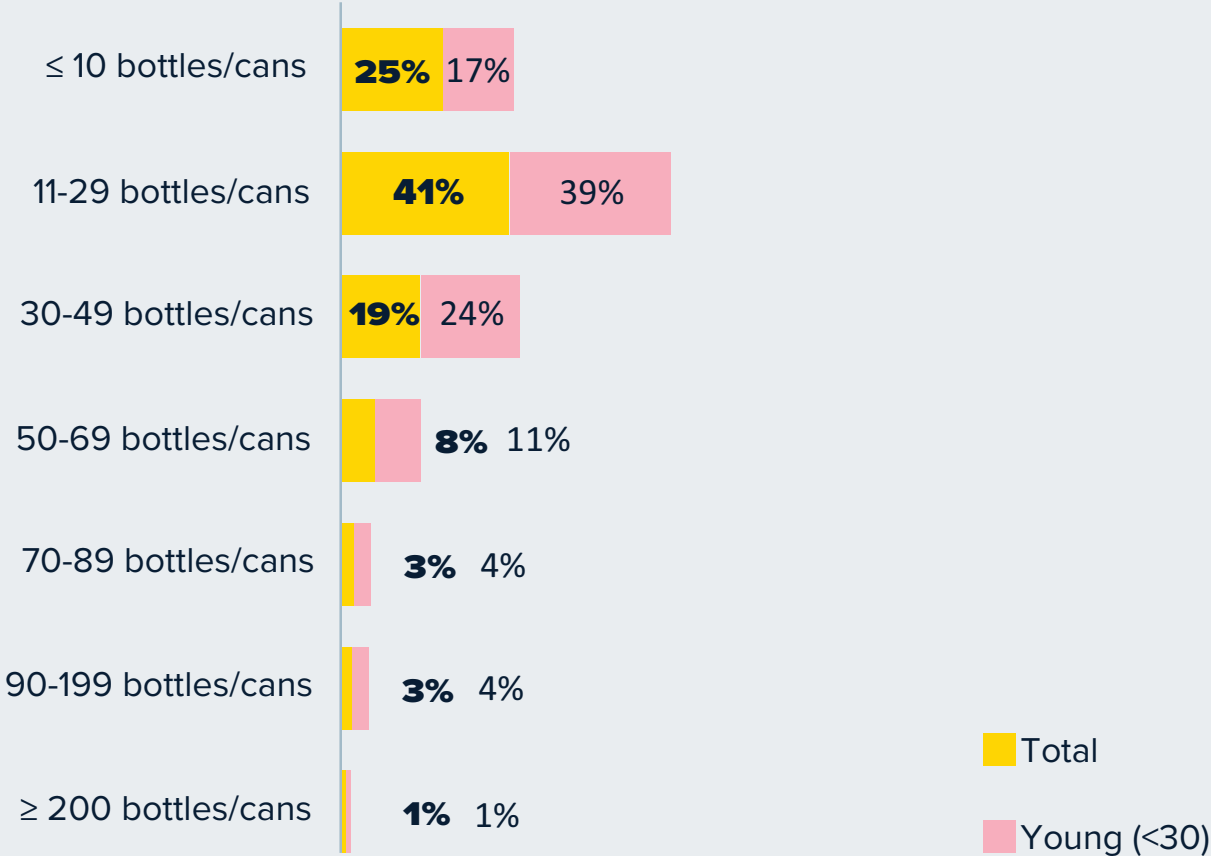
The survey found that 66% of respondents return 29 or fewer containers per occasion.

Recycling frequency and volume are inversely related: young people (<30 years) and high-volume recyclers (50+ containers or more per recycling occasion) were found to return more containers per occasion than average, but they recycle less often.

Recycling frequency: Total and per sub-group



Volume returned per occasion





WHAT CONSUMERS LIKE: REVERSE VENDING UPTIME AND EASE OF USE

In the age of hyper convenience, it's no surprise that consumers expect a good recycling experience from retailers and reverse vending manufacturers.

In some countries, hygiene was more important; in Sweden, Norway and Finland, a trash bin close by and the opportunity to wash hands were among the top-five drivers of satisfaction.

High-volume recyclers rated several satisfaction drivers higher than the total study population. For this sub-group, it's especially important that the store has several reverse vending machines and that containers can be recycled quickly and in one go.

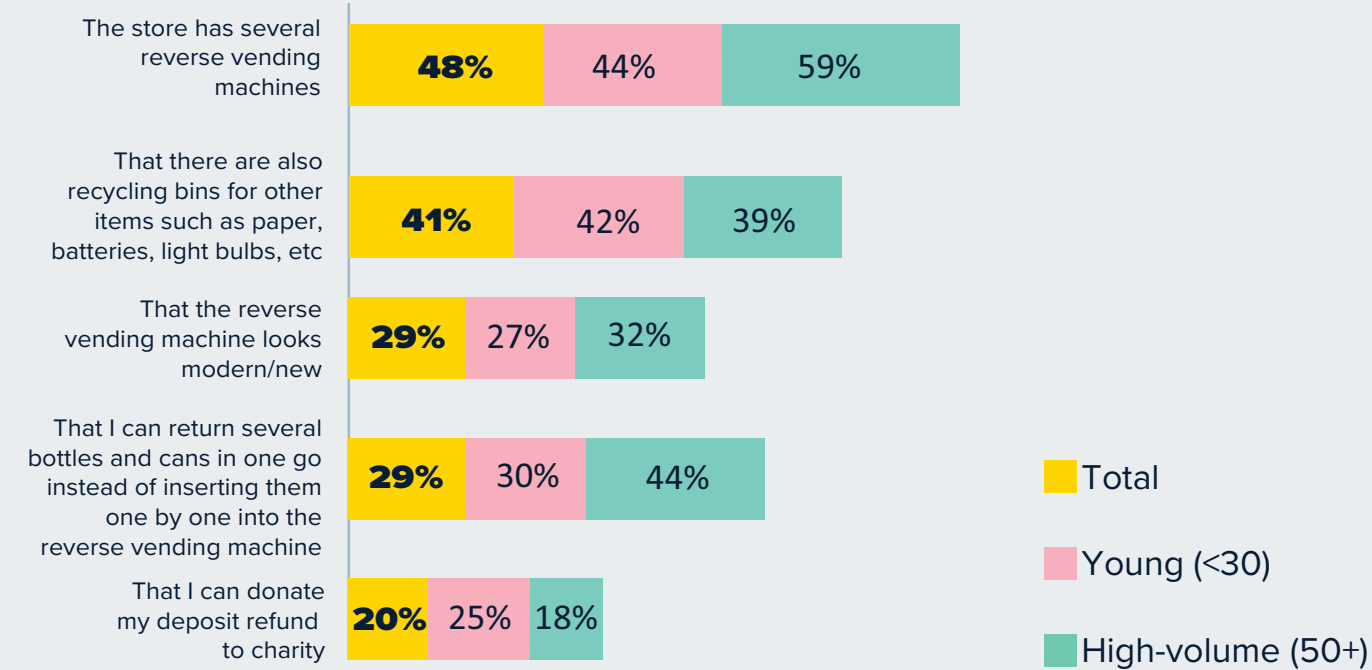
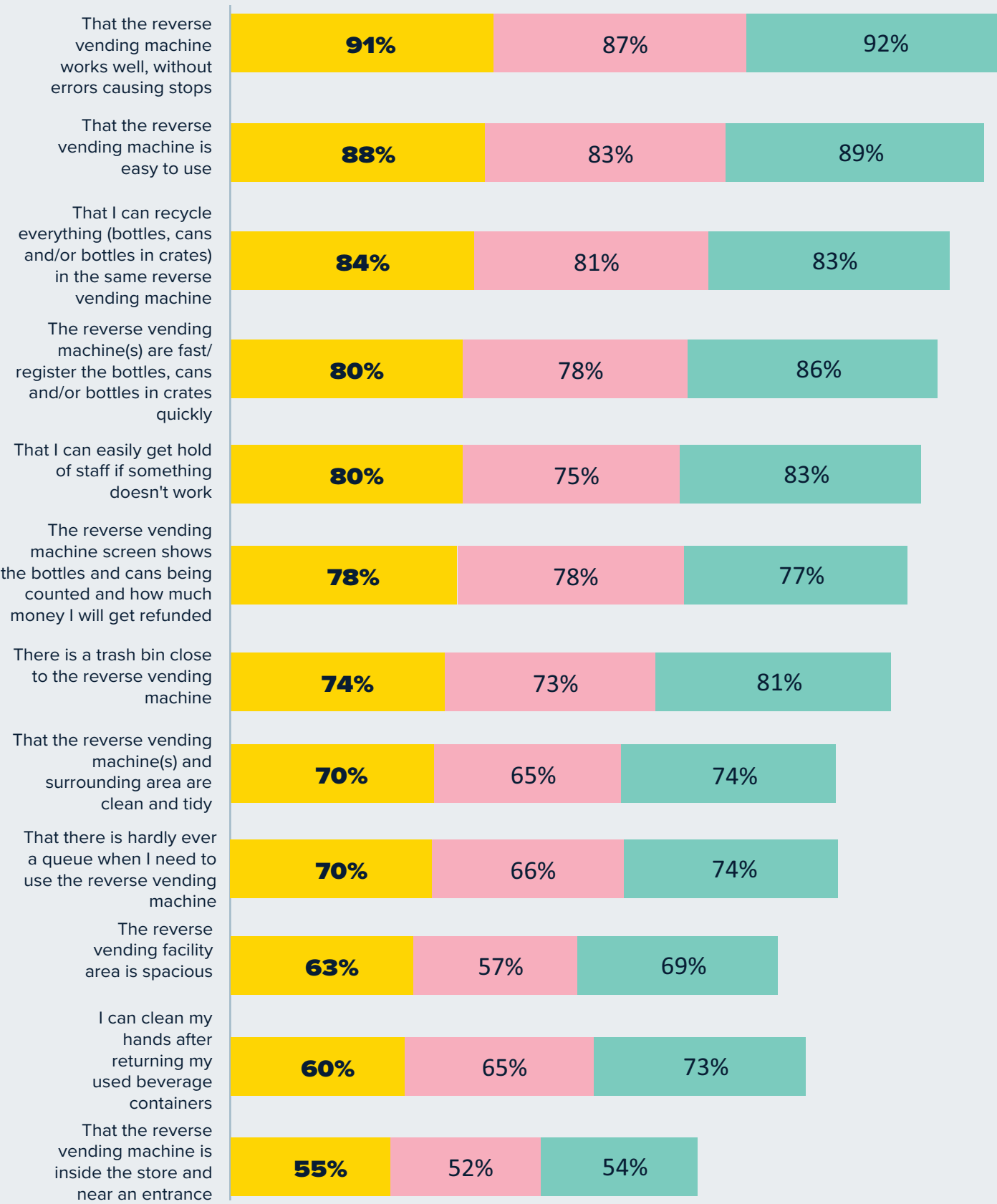
How to delight consumers? The study found five main drivers of satisfaction with stores' reverse vending facilities:

- 1. No machine downtime**
- 2. Easy-to-use reverse vending machines**
- 3. Ability to return all container types to the same machine**
- 4. Quick scanning of containers**
- 5. Staff is easy to contact when problems arise**



Satisfaction drivers: Total and per sub-group

% think it's important (4) or very important (5) on a 1-5 scale





Satisfaction drivers: Overview per country

	SE	NO	FI	DK	NL	DE	SK
That the reverse vending machine works well, without errors causing stops	95%	93%	91%	91%	89%	88%	88%
That the reverse vending machine is easy to use	92%	86%	90%	87%	89%	87%	83%
That I can recycle everything (bottles, cans and/or bottles in crates) in the same reverse vending machine	70%	94%	94%	84%	79%	85%	82%
The reverse vending machine(s) are fast/register the bottles, cans and/or bottles in crates quickly	83%	85%	85%	75%	76%	75%	79%
That I can easily get hold of staff if something doesn't work	81%	81%	76%	77%	77%	78%	87%
The reverse vending machine screen shows the bottles and cans being counted and how much money I will get refunded	73%	71%	79%	77%	83%	81%	80%
There is a trash bin close to the reverse vending machine	87%	88%	85%	75%	61%	61%	62%
That the reverse vending machine(s) and surrounding area are clean and tidy	81%	73%	70%	70%	63%	72%	64%
That there is hardly ever a queue when I need to use the reverse vending machine	72%	71%	65%	69%	61%	75%	74%
The reverse vending facility area is spacious	66%	58%	68%	53%	57%	70%	70%
I can clean my hands after returning my used beverage containers	79%	82%	82%	53%	29%	33%	-
That the reverse vending machine is inside the store and near an entrance	54%	60%	75%	32%	43%	63%	61%
The store has several reverse vending machines	68%	37%	64%	29%	24%	65%	46%
That there are also recycling bins for other items such as paper, batteries, light bulbs, etc	35%	42%	51%	20%	51%	35%	52%
That the reverse vending machine looks modern/new	25%	21%	33%	18%	22%	29%	55%
That I can return several bottles and cans in one go instead of inserting them one by one into the reverse vending machine	39%	31%	30%	21%	-	22%	-
That I can donate my deposit refund to charity	25%	28%	10%	12%	15%	19%	29%

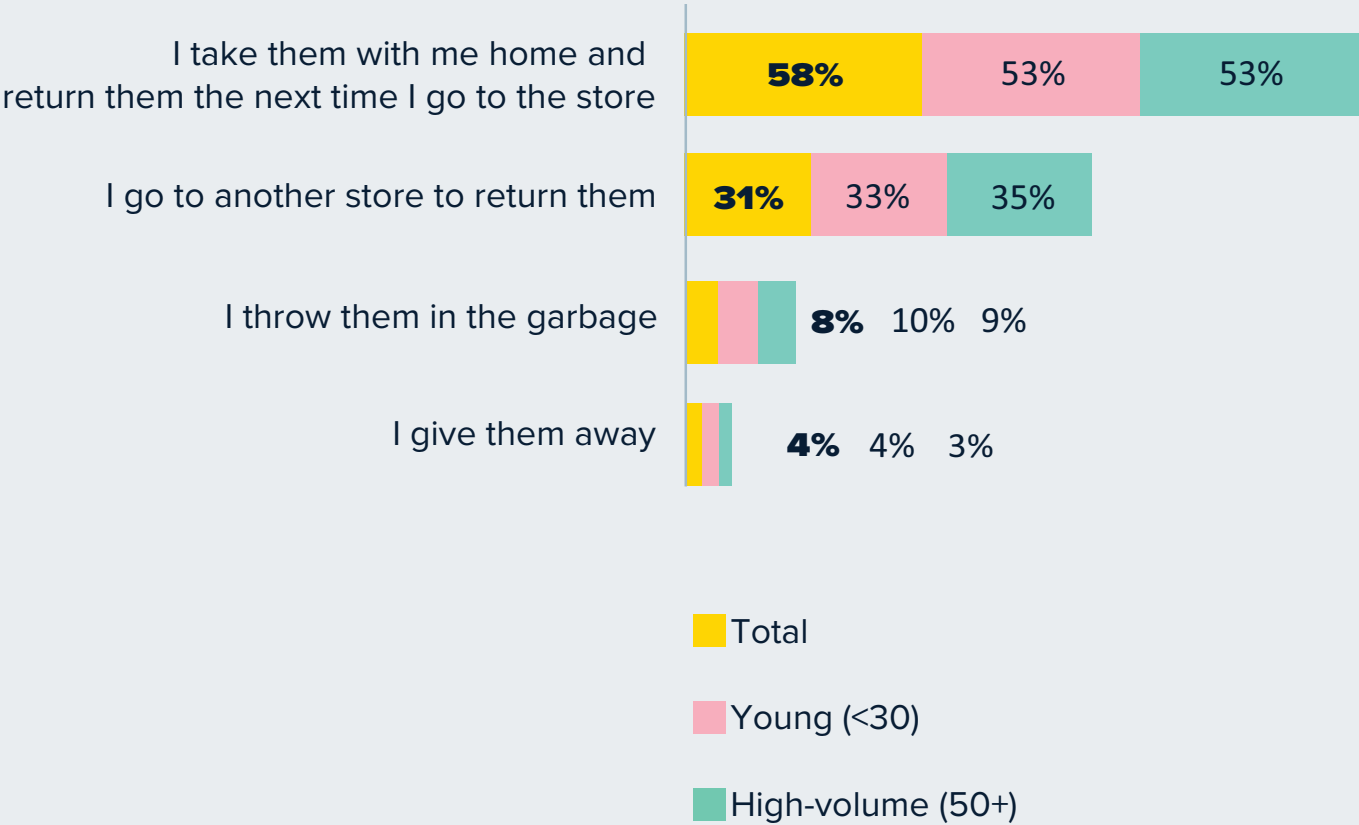


A SMOOTH RECYCLING EXPERIENCE IS VITAL

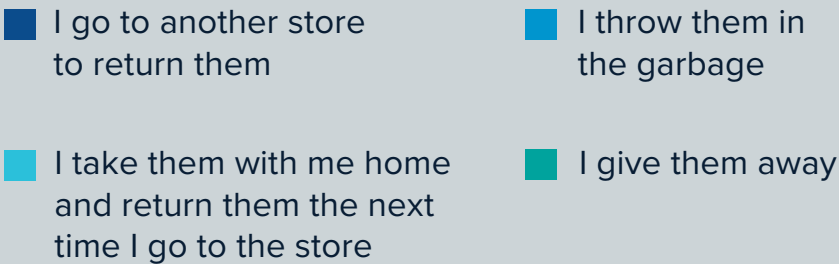
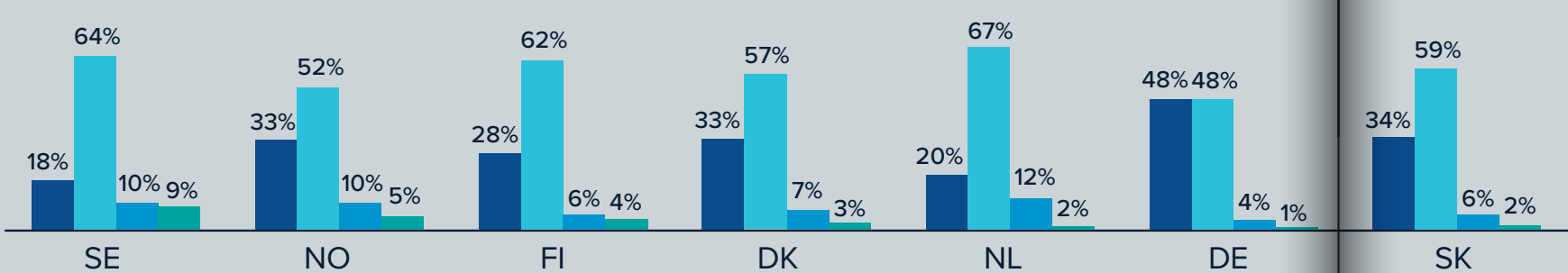
Around 31% of respondents said they would go to another store to return their bottles and cans if there is a long queue or downtime at the reverse vending machine. This number was even higher among high-volume recyclers (35% would go to another store) and in Germany (48%).

A sizable number of consumers (29%) have two or more stores where they return used drink containers for recycling.

Consequences of downtime or too long queue: Total and per sub-group



Consequences of downtime or too long queue: Overview per country





WHAT CONSUMERS WANT: MORE CONTAINER TYPES, MULTI-FEED RECYCLING, AND DIGITAL PAYOUT

Because consumers' expectations towards retailers and reverse vending suppliers are ever growing, the study tested several ideas for improvement to deposit return systems and retail reverse vending facilities.

Main topics emerged:

- 1. DRS expansion
- 2. Expansion of in-store recycling stations
- 3. Multi-feed reverse vending machines
- 4. Digital deposit refunds

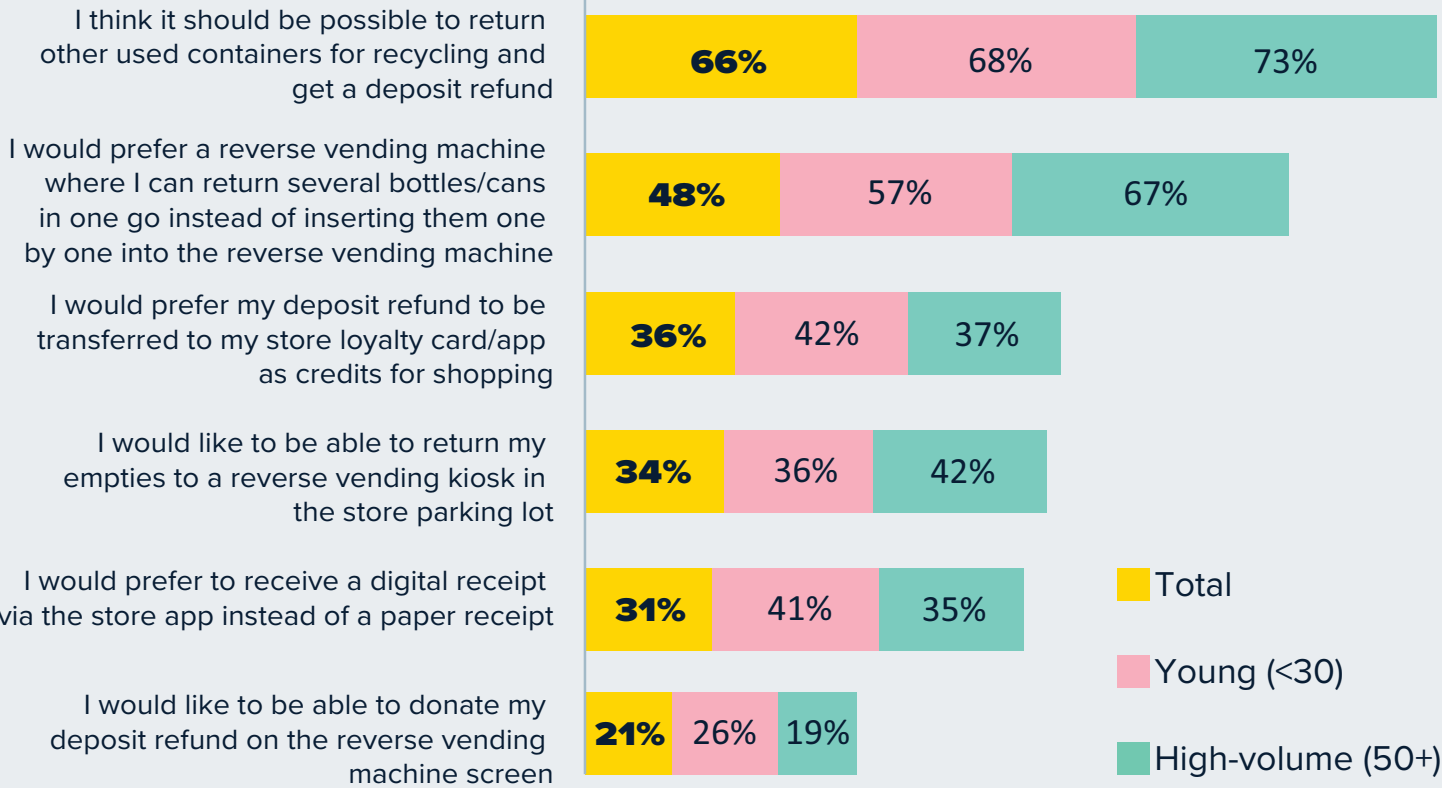
Many respondents (66%) would like to see the DRS concept expanded to other products. They would like to be able to return other types of containers for recycling and get a deposit refund. The interest was even higher among high-volume recyclers (73%).

The desire for a fast recycling experience was also seen in respondents' interest in returning containers in bulk, rather than inserting them one by one. **48% of respondents would like to use multi-feed reverse vending machines, with this rate even higher in Sweden (66%), Norway (65%) and Germany (51%), where these machines are more readily available.**

With today's increasingly digital lifestyles and a high desire for convenience, electronic payout also gained interest among respondents. **36% said they would like to have their deposit refunded to their store loyalty card or app** (this was highest in Sweden and Finland, with 46% and 41% respectively), and 31% wished to receive a digital refund voucher instead of a paper one.

Consumer wishes: Total and per sub-group

% think the statement applies well (4) or very well (5) on a 1-5 scale



Consumer wishes: Country comparison

	SE	NO	FI	DK	NL	DE	SK
I think it should be possible to return other used containers for recycling and get a deposit refund	72%	71%	69%	70%	62%	63%	56%
I would like to have a recycling bin for other items such as paper, lamps, small electronics, batteries, etc	45%	60%	64%	30%	58%	52%	49%
I would prefer a reverse vending machine where I can return several bottles/cans in one go instead of inserting them one by one into the reverse vending machine	66%	65%	27%	46%	30%	51%	50%
I would prefer my deposit refund to be transferred to my store loyalty card/app as credits for shopping	46%	37%	41%	27%	28%	32%	39%
I would like to be able to return my empties to a reverse vending kiosk in the store parking lot	31%	36%	27%	36%	30%	32%	42%
I would prefer to receive a digital receipt via the store app instead of a paper receipt	36%	34%	24%	28%	29%	30%	33%
I would like to be able to return bottles and cans without going to a physical store when I do my grocery shopping online	26%	25%	17%	22%	33%	33%	32%
I would like to be able to donate my deposit refund on the reverse vending machine screen	24%	31%	10%	15%	19%	25%	21%
I rarely return used bottles/cans for recycling that I bought for immediate consumption	21%	19%	7%	12%	10%	22%	18%

Conclusion

The study shows that providing a smooth and pleasant recycling experience can help drive consumer loyalty to the grocery store and increase sales.

A key learning is that a positive evaluation of the store's reverse vending facilities is dependent on several aspects of the experience, notably reliability, convenience, speed and hygiene.

This means that retailers who invest in modern and fast reverse vending machines, consider digital experiences, and put the resources in place to keep them and the surrounding area clean and tidy, can gain a competitive advantage.

For more information, please contact your local TOMRA representative or visit: tomra.com



FIVE KEY TAKEAWAYS FOR RETAILERS:

1.

Consumers often return their containers to the same location each time, showing that store loyalty can be as relevant for recycling habits as for shopping behavior.

2.

Quality of reverse vending facilities is one of the top-three criteria for selecting a store to return their empty beverage containers.

3.

Most recyclers spend their deposit refund in the store where they returned their containers for recycling.

4.

Consumers want fast, easy, and clean facilities for returning their used beverage containers. Those who are aware of multi-feed reverse vending offerings prefer them.

5.

Many consumers will simply go elsewhere if they cannot return containers in store, for whatever reason.

METHODOLOGY



- Quantitative online study in seven countries
- Questionnaires in the local language
- 1000 respondents per country
- Data collected in November 2022
- Confidence level: 95%



- Sweden (SE)
- Norway (NO)
- Finland (FI)
- Denmark (DK)
- Netherlands (NL)
- Germany (DE)
- Slovakia (SK)

The respondents were screened according to the following criteria:

People aged 18-70 years who return their used bottles, cans and/or bottles in crates for recycling/reuse at a grocery store every other month or more often as part of a national deposit return system (DRS) for beverage container recycling.

About TOMRA Collection

TOMRA Collection is part of the TOMRA Group, which is Leading the Resource Revolution by transforming how we obtain, use, and reuse our world's resources.

With over 80,000 installations across more than 60 markets, retailers and consumers around the world rely on our reverse vending machines to collect over 45 billion used bottles and cans each year, which can be recycled into new containers.

TOMRA has 50 years' experience in deposit return systems, working in every part of the value chain.

Clean Loop Recycling is the easy and rewarding way to make choices that make change.

Get in the Loop at Tomra.com/Collection



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