

[DOI: 10.20472/EFC.2024.022.012](https://doi.org/10.20472/EFC.2024.022.012)

MARTINA ŠVECOVÁ

University of Finance and Administration (VSFS), Czech Republic

ALEŠ HES

University of Finance and Administration (VSFS), Czech Republic

DANIELA ŠÁLKOVÁ

Faculty of Economics and Management, Czech University of Life Sciences Prague, Czech Republic

JANA HINKE

Faculty of Economics and Management, Czech University of Life Sciences Prague, Czech Republic

IDENTIFICATION OF KEY ASPECTS OF CITIZENS' USE OF RE-USE CENTRES/POINTS, INCLUDING THE POTENTIAL AND EXPECTATIONS OF THIS FORM OF WASTE REUSE

Abstract:

The transition to a circular economy requires coordinated efforts across various spheres, including government policies, business practices, social norms, and consumer behaviour (Ellen MacArthur Foundation, 2015; Hazen et al., 2017). Re-use centres and re-use points play a crucial role in this transition by extending the life cycle of products and materials, benefiting both the environment and the economy. These centres not only promote sustainable consumption but also contribute to social entrepreneurship through community education initiatives. For these centres to be effective, they must be embraced by citizens and consumers who recognize their social and economic value. To achieve this, re-use centres and other locations dedicated to repurposing goods must utilize verified research findings on the suitability of their products and the purchasing potential of different demographic groups.

This exploratory study assesses the suitability of repurposed products, focusing on identifying demographic groups with the highest and lowest purchasing potential for selected used products. Covering 8 products and 25 variables across target groups, the study provides a detailed description of the relationships between specific products and specific target groups. These findings form the basis for exploring connections between these groups and the behavioural motivations underlying consumer behaviour, as outlined in the theory of behavioural economics. The research was conducted in June 2024 via a questionnaire survey of a representative sample of 1,300 respondents, selected by quota sampling to match the distribution of the Czech Republic's population.

The study reveals significant gaps between perceived suitability for sale and actual purchase, particularly in categories like art, automobiles, and books. The findings underscore the importance of tailored communication strategies that address specific product categories and consumer motivations. This research contributes to the sustainable development of the Czech economy, enhances the understanding of environmental economics at the microeconomic level, and provides a knowledge base for operators of re-use centres and re-use points.

Keywords:

Consumer, Consumer Economics Empirical Analysis, Marketing, Micro-Based Behavioural Economics, Recycling, Retail, Reuse Centre, Reuse Point, Social Entrepreneurship, Sustainability Economics

JEL Classification: M30, D12, Q56

This research was funded by the Technology Agency of the Czech Republic under the project titled "Establishing and Operating a Re-use Centre/Re-use Point in the Social, Legal, and Economic Conditions of the Czech Republic," registration number: TQ01000226.

1 Introduction¹

Companies are increasingly adopting sustainable waste management practices, converting waste into energy and promoting reusable products, while highlighting the need for educating end users to enhance their awareness and participation in waste reduction (Gollnhofer, 2017). Studies have demonstrated that educational campaigns can effectively raise awareness, such as reducing food waste (Kountouris, 2022). Similarly, research shows that households are more willing to manage waste electrical and electronic equipment (WEEE) when provided with adequate knowledge on safe disposal and recycling (Chinie et al., 2021), emphasizing the importance of educational interventions in waste management (Miner et al., 2020).

To ensure that residents are well-informed and that awareness campaigns are effective, it is essential to focus on identifying the existing waste management culture. The first step is to understand which products are perceived as suitable for purchase and to identify the customer groups that buy them. The logical next step is to understand the additional behavioural motivations that act as barriers to purchase. This two-step approach should establish a knowledge base for operators of re-use centres, re-use points, and other locations dedicated to the distribution of used goods.

2 Theoretical background

The “waste hierarchy” principle, foundational to European waste legislation, prioritizes waste prevention and re-use over recycling. While recycling centres handle various materials, some could be repurposed instead. Re-use centres and re-use points are vital in reducing waste volume by promoting product reuse (Gusmerotti et al., 2019; Vincevica-Gaile et al., 2023). Municipalities can enhance neighbourhood appeal and support a circular economy by incorporating re-use activities and strategically placing recycling stations (Gusmerotti et al., 2019; Wilhelmsson, 2022). Integrating re-use centres into waste management chains offers significant prevention benefits, influenced by economic, social, and environmental factors. Factors such as perceived behavioural control, moral obligations, and policy effectiveness shape waste separation behaviour, underscoring the role of behavioural intention in waste management (Babazadeh et al., 2023).

Local waste management culture influences individual recycling behaviour, highlighting the need for sustainable practices that support pro-environmental policies (Farooq et al., 2022). Profiling “sustainability-minded” consumers is challenging, but socio-demographic indicators reveal patterns: women tend toward circular consumption (Bulut et al., 2017; Panzone et al., 2016), younger generations are more environmentally conscious, while older individuals focus on sharing and collaboration (Bulut et al., 2017). Higher education and income are linked to environmentally conscious behaviour, although lower-income individuals often participate in the sharing economy due to financial benefits (Fraiberger & Sundararajan, 2017).

However, no comprehensive survey has yet been conducted to understand the behaviour of Czech consumers and their perceptions of purchasing second-hand items. This gap in knowledge served as the driving force behind the following research.

¹ This research was funded by the Technology Agency of the Czech Republic under the project titled “*Establishing and Operating a Re-use Centre/Re-use Point in the Social, Legal, and Economic Conditions of the Czech Republic*,” registration number: TQ01000226.

3 Methodology and results

This study is based on quantitative research using a questionnaire survey conducted in June 2024 with a representative sample of 1,300 respondents. Quotas were set to mirror the Czech Republic's population distribution across gender, age, place of residence, and education, supplemented by data on income and economic activity.

The questionnaire, designed following the theory of planned behaviour, employed a 1-7 response scale to mitigate the ceiling effect (Fishbein & Ajzen, 2010). Key questions included:

- "I buy used items (e.g., at car dealerships, second-hand shops, antique shops, bazaars) with options "yes", "sometimes", and "no".
- "Which items can be sold as used items?" For the analysis in this paper, the group "Other" was removed because the responses entered will require further content analysis. Scaled from "completely suitable item" to "completely unsuitable item".
- "I personally buy the following used items" (excluding "Other"), scaled from "never" to "often".

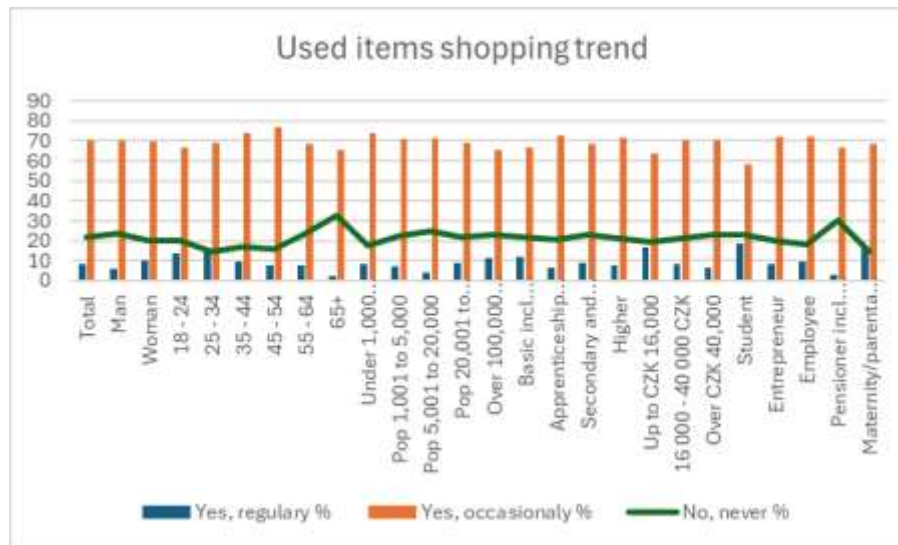
The research aimed to identify selected repurposed products and determine the Czech demographic groups with the highest and lowest potential to purchase them. The study addressed three research questions:

- *"Which used products do consumers perceive as the most and least suitable for sale?"*
- *"Are there differences between perceived suitability and actual purchase of used products? If so, for which products is this relationship strongest/weakest?"*
- *"Which consumer groups purchase products perceived as least suitable for purchase?"*

The study aims to verify the sales prospects of various used products for current and potential operators of re-use centres and re-use points, based on Czech residents' behaviour.

3.1 Consumer groups who do not buy used goods

An elimination question in the study excluded 22% of respondents (282 out of 1,300) who do not shop at all. Consequently, 1,018 respondents were analysed for purchasing behaviour. After accounting for a 5% statistical margin of error, retirees (31%) and consumers aged 65+ were notable outliers. Males (24%) more frequently left the group than females (20%), aligning with the theoretical expectations. However, this difference, within the 5% margin, does not significantly impact the general trend in the Czech Republic. Notable differences did emerge across individual product categories.

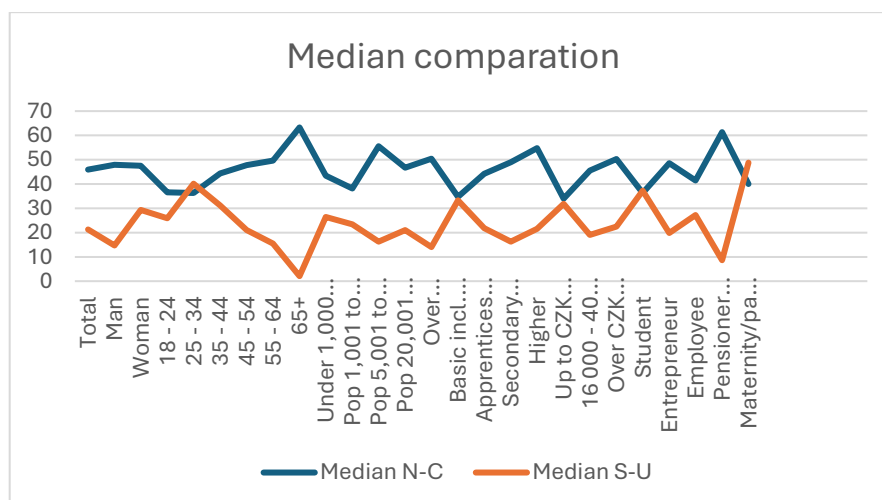
Figure 1 Used items shopping trend

Source: author analysis.

3.2 Perception of suitability and sale

The values were calculated by summing the averages of responses within each consumer group. A positive value (scale 1-3) indicates a positive attitude toward the suitability for sale, while a negative value (scale 5-7) indicates unsuitability. Values of 4, representing an undecided stance, were excluded. Trends were first assessed across groups, with all categories considered with a 5% margin of statistical error (this will not be repeated in subsequent references for space considerations).

A general assessment was conducted using the median for each target group. The median was preferred over the average for category comparison due to its appropriateness in this context. The overall trend favours product suitability, with the average median for unsuitable products (U) at 27.62% and for suitable products (S) at 48.92%. The median for not purchased (N) products is 63.46%, while for purchased (C) products it is 17.58%.

Figure 2 Median calculation and trends

Source: author analysis.

The general trend indicates a 21.7% difference between perceived suitability (S) and unsuitability (U), with women showing more optimism toward used products than men (29.3% vs. 14.7%). Parents with children (48.8%) were the most positive, followed by young adults aged 25-34 (40.1%), students (37.2%), and those with primary education (33.3%). Conversely, people aged 65+ perceived the most items as unsuitable, with a median difference of only 2.1% between suitability and unsuitability.

Regarding the differences between purchased (C) and non-purchased (N) items, the smallest median differences are seen among those with incomes under CZK 16,000 (34%), consumers with primary education (34.8%), and young people aged 18-34 (36.5%). Larger differences are observed among the 65+ (63.3%) and retired (61.1%) categories, with a notable surprise among residents of municipalities with populations between 5,001 and 20,000 (55.6%).

Finally, we categorized the groups by product to better understand relationships, focusing on the four products rated as most suitable for resale and the four rated as least suitable. This analysis facilitates the interpretation of statistical results regarding group preferences and purchases.

Table 1 Summary of the five best and worst perceived products for resale

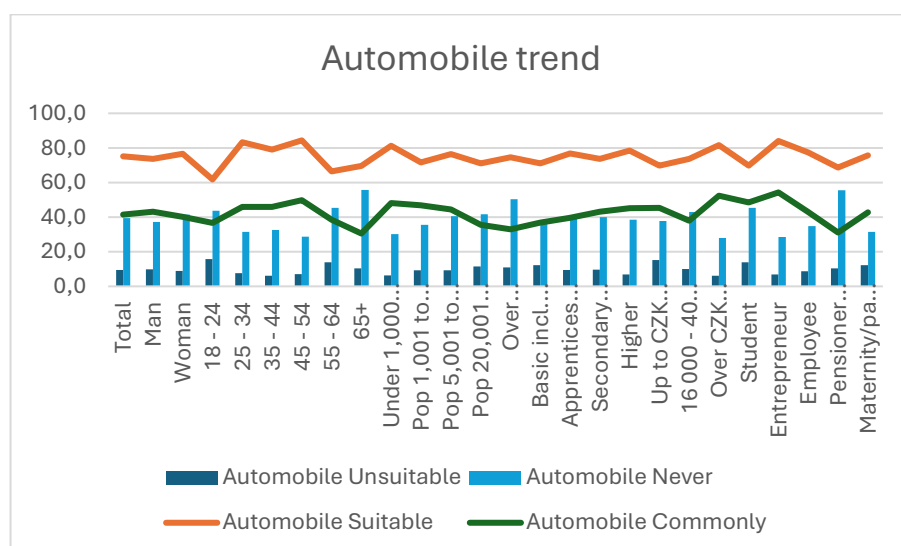
Most suitable (v %)	Automobile	Art	Books, CDs, DVDs	Children's clothing
	75,2	71,3	70,3	63,8
Least suitable (v%)	Home textiles	Expensive footwear	Sanitary ceramics	Footwear (regular)
	33,5	27,5	25,5	19,5

Source: author analysis.

3.3 Selected Products Analysis: Most Suitable

The first product analysed is the automobile.

Figure 3 Automobile Purchase vs Willingness to Buy

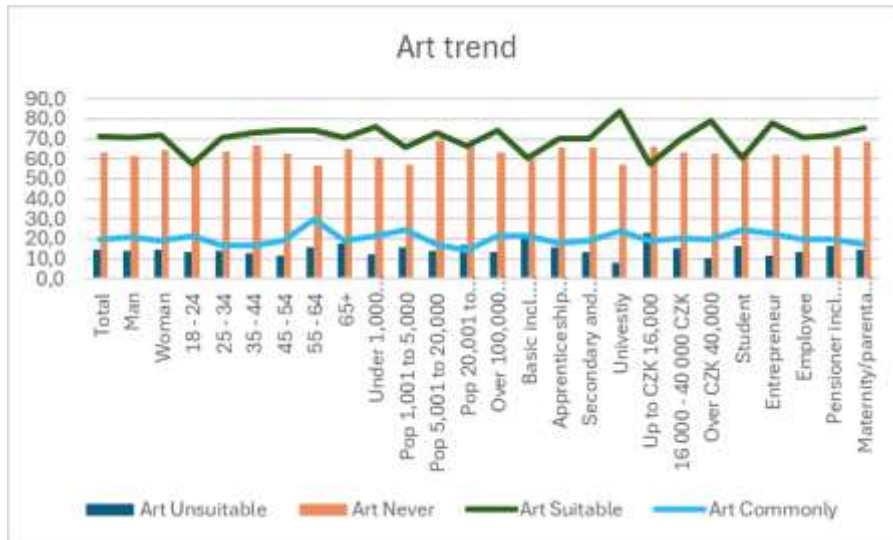


Source: author analysis

The largest gap between perceived suitability (75.2%) and unsuitability (9.4%) among the analysed products is observed for used automobiles. Young adults aged 18-24 and those with incomes below

CZK 16,000 (15-16%) deviate significantly, perceiving used car purchases more negatively. In contrast, consumers with incomes above CZK 40,000 (52.4%) and entrepreneurs (54.3%) are more likely to purchase used cars. The lowest purchase rates are among retirees, those aged 65+ (31%), and residents of municipalities with over 100,000 inhabitants (33%).

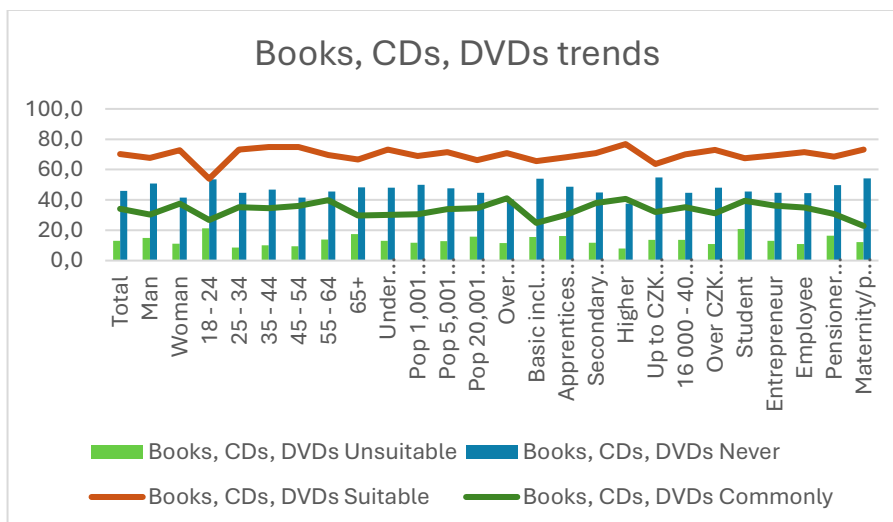
Figure 4 Art Purchase vs Willingness to Buy



Source: author analysis

Art is viewed as most suitable for purchase by respondents with a university education (83.6%), earnings over CZK 40,000 (78.8%), and entrepreneurs (77.9%). Conversely, it is deemed least suitable by consumers with primary education and incomes under CZK 16,000 (around 25%). Regarding actual purchases, people aged 55-64 (30.1%) exceed the average (19.8%), while residents of municipalities with 20,001-100,000 inhabitants fall below the average (14.2%).

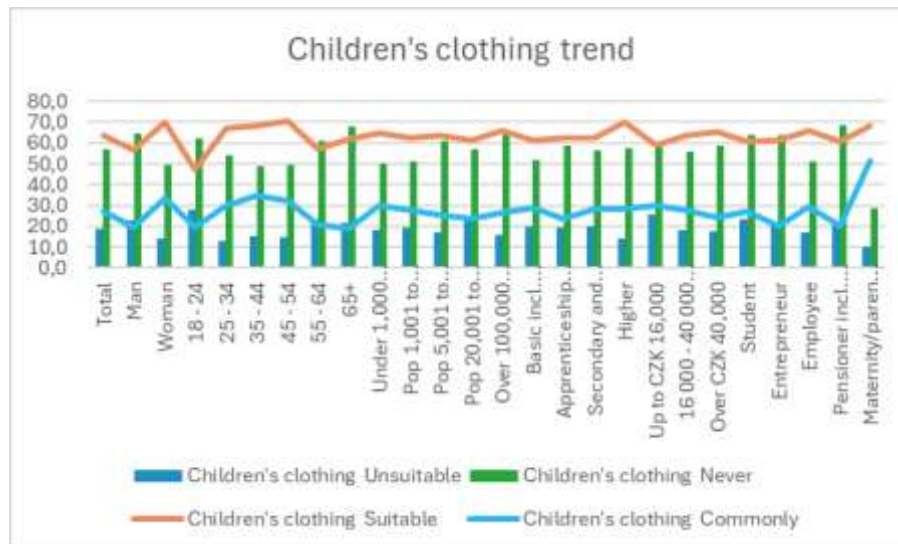
Figure 5 Books, CDs, DVDs Purchase vs Willingness to Buy



Source: author analysis

The overall suitability of books, CDs, and DVDs is rated at 70.3%, with the highest approval from consumers with a university education (76.8%). Only 13% view them as unsuitable, indicating broad consensus. Purchases are most common among residents of municipalities with over 100,000 people and those with university education (around 41%), followed by consumers aged 55-64 and students (39%). Conversely, those who have never purchased these items include individuals with incomes below CZK 16,000, parents with children (54%), respondents with primary education, and young people aged 18-24 (53%).

Figure 6 Children's Clothing Purchase vs Willingness to Buy



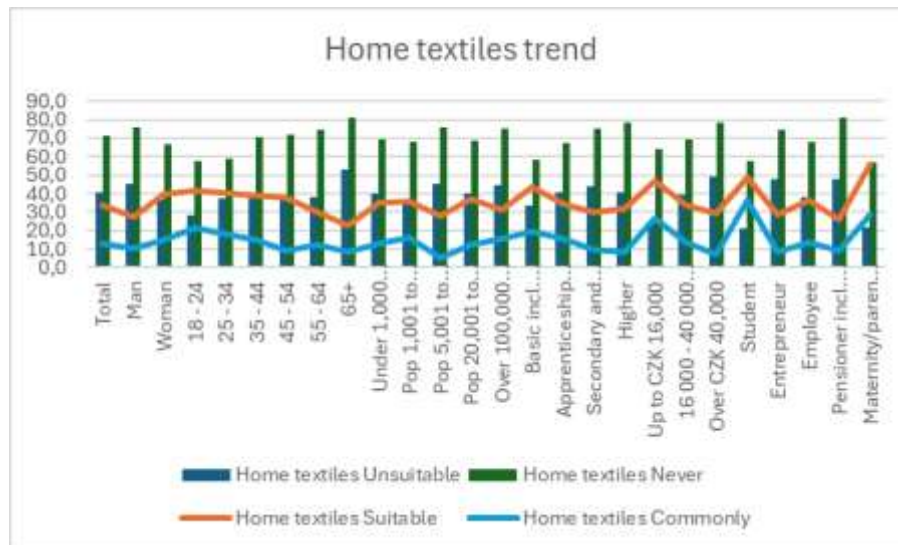
Source: author analysis

63.8% of respondents consider children's clothing suitable for purchase, with the highest approval from women, consumers aged 45-54, and those with a university education (around 70%). Conversely, young adults aged 18-24 (28.1%) and those earning less than CZK 16,000 (25.8%) view it as unsuitable above the average (18.5%). The most likely to purchase used children's clothing are parents with young children (51.4%) and consumers aged 35-44 (34.6%) and 45-54 (32.2%). However, those least likely to purchase used children's clothing include the 65+ category and retirees (around 68%), men (64.7%), and residents of municipalities with over 100,000 inhabitants (66.1%).

3.4 Selected Products Analysis: Least Suitable

Home textiles rank first among unsuitable products analysed, placing seventeenth overall.

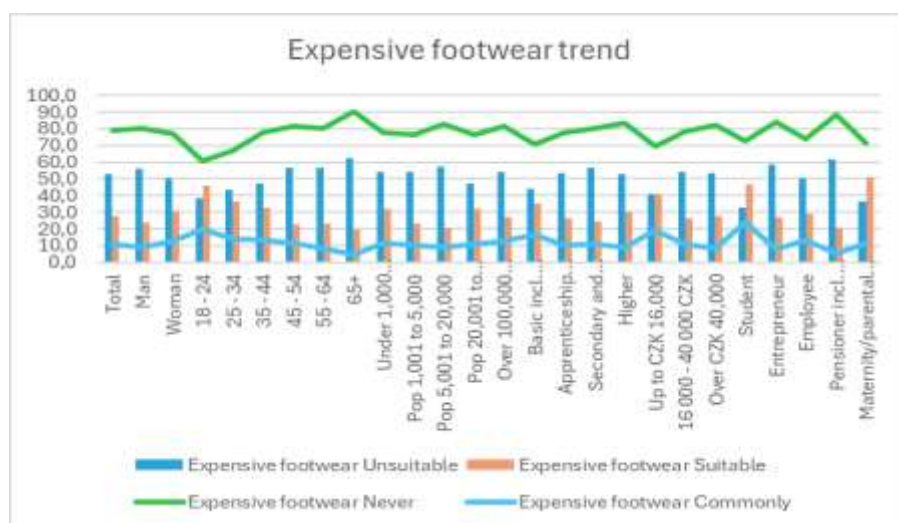
Figure 7 Home Textiles Purchase vs Willingness to Buy



Source: author analysis

It is deemed unsuitable for resale by 40.7% of respondents, while 33.5% find it suitable. A significant 71% have never purchased used home textiles, with only 12.8% having done so. Unsuitability is highest among respondents aged 65+ (52.7%), those earning over CZK 40,000 (49.1%), entrepreneurs (48.1%), and retirees (47.8%). Conversely, parents with children (56.1%), students (48.8%), those earning under CZK 16,000 (47%), and those with primary education (43.3%) view it as suitable, along with women and consumers aged 18-54 (around 40%). Interestingly, the group that has never purchased used home textiles does not significantly deviate from the average. The highest purchase rates are among those earning less than CZK 16,000 (28.3%) and students (21.2%).

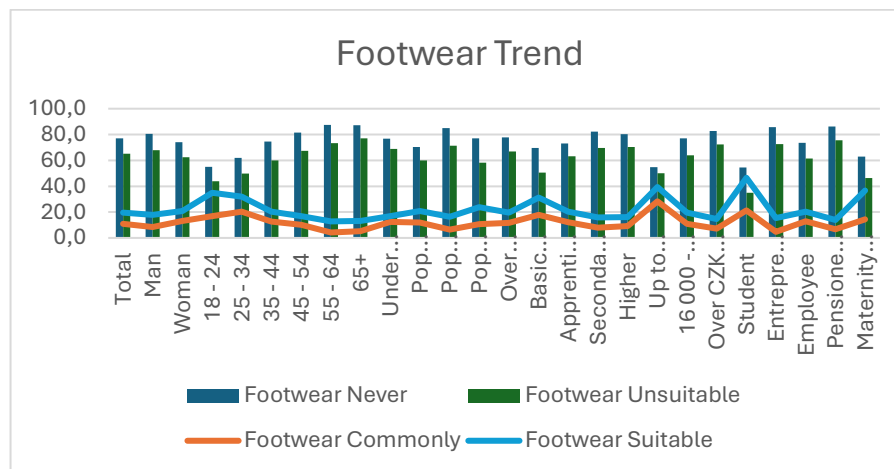
Figure 8 Expensive Footwear Purchase vs Willingness to Buy



Source: author analysis.

Generally, most respondents view the purchase of used casual shoes as unsuitable (65.1%), with similar trends observed for expensive footwear (53.1% unsuitable).

Figure 9 Footwear Purchase vs Willingness to Buy



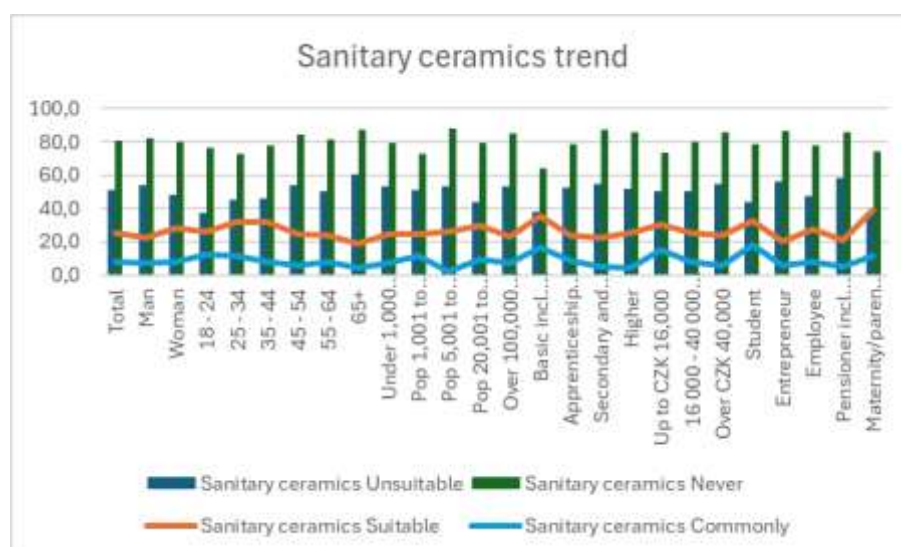
Source: author analysis

Only 19.5% find ordinary footwear suitable for purchase used, compared to 27.5% for expensive footwear. Although expensive footwear is perceived as slightly more suitable, it is less frequently purchased. A significant majority have never purchased used footwear—77.1% for ordinary and 78.8% for expensive. Actual purchase rates are low: 10.1% for ordinary and 10.9% for expensive footwear.

Used footwear is particularly unpopular among consumers aged 65+ and retirees, with around 90% never having purchased it used. Similarly, the 55-64 age group, retirees, entrepreneurs, and residents of municipalities with populations between 5,001 and 20,000 largely avoid purchasing ordinary footwear used (85-87.5%).

In contrast, used footwear is mainly purchased by those with incomes under CZK 16,000 (28.3%), as well as students and young people aged 25-34 (around 20%).

Figure 10 Sanitary Ceramics Purchase vs Willingness to Buy



Source: author analysis

Sanitary ceramics are ranked ahead of footwear in suitability. They are perceived as unsuitable for purchase used by 51.1% of respondents, particularly those aged 65+ (60.1%). However, 25.5% of respondents, notably parents with children (39%), individuals with primary education (35.6%), and younger respondents aged 25-44 and students (both 32%), consider them suitable.

A substantial 80.8% have never purchased used sanitary ceramics, especially consumers aged 65+, those from municipalities with populations between 5,001 and 20,000, individuals with secondary education, entrepreneurs, and retirees (86-88%). Used sanitary ceramics are primarily purchased by students, individuals with primary education, and those earning less than CZK 16,000 (15-18%).

4 Conclusion

This study highlights that the decision to purchase used products is not driven solely by environmental or economic benefits. Despite these advantages, consumer behaviour is influenced by concerns about product quality, performance, hygiene, and the stigma associated with second-hand goods (Camacho-Otero et al., 2017).

Different product categories demonstrate unique purchasing patterns. For instance, art is viewed as suitable by older, educated consumers, entrepreneurs, and those in urban areas, while used cars are favoured by high-income individuals and entrepreneurs from smaller municipalities. These findings suggest that the appeal of certain products may be more related to social values than economic considerations.

Books and DVDs and CDs, though perceived as suitable, are less frequently purchased, likely due to the availability of digital alternatives.

Children's clothing is widely considered suitable for purchase by women, middle-aged consumers, and those with a university education. It is most often purchased by parents on maternity leave with young children and individuals aged 35-54, but less so by those from big cities. This suggests that the appeal of children's clothing is driven not only by environmental and economic benefits but also by socio-psychological factors.

Products associated with hygiene, such as sanitary ceramics and footwear, present an interesting case. Although these items are perceived as unsuitable by many, they are still purchased by individuals driven by economic necessity, indicating a willingness to overlook hygiene concerns when necessary.

The study's results align with the research questions posed. First, consumers perceive art, automobiles, and books as the most suitable products for resale, while footwear and sanitary ceramics are seen as least suitable. Second, there is a notable difference between perceived suitability and actual purchase, with the strongest discrepancies observed in categories like art and books. Third, the consumer groups most likely to purchase products perceived as unsuitable include students, young adults, and those with lower incomes, particularly in categories like clothing and sanitary ceramics.

Overall, the findings underscore the importance of tailored communication strategies for re-used centres and points that consider the specific appeals of each product category. For some groups, emphasizing environmental or economic benefits may be effective, while for others, addressing socio-psychological factors could be key. Understanding these motivations will require further analysis, which is crucial for developing strategies that can increase the purchase of used goods across different demographics.

This research aimed to identify selected repurposed products and determine the Czech demographic groups with the highest and lowest potential to purchase them. The study successfully

addressed this aim and the associated research questions, providing a foundation for further exploration into the behavioural motivations behind second-hand purchasing decisions.

5 References

- Babazadeh, T., Ranjbaran, S., Kouzekanani, K., Abedi Nerbin, S., Heizomi, H., & Ramazani, M. E. (2023). Determinants of waste separation behavior Tabriz, Iran: An application of the theory of planned behavior at health center. *Frontiers in Environmental Science*, 11. <https://doi.org/10.3389/fenvs.2023.985095>
- Bulut, Z. A., Kökalan Çımrın, F., & Doğan, O. (2017). Gender, generation and sustainable consumption: Exploring the behaviour of consumers from Izmir, Turkey. *International Journal of Consumer Studies*, 41(6), 597–604. <https://doi.org/10.1111/ijcs.12371>
- Camacho-Otero, J., Pettersen, I. N., & Boks, C. (2017). Consumer and user acceptance in the circular economy: What are researchers missing? In *PLATE: Product Lifetimes And The Environment* (pp. 65–69). IOS Press. <https://doi.org/10.3233/978-1-61499-820-4-65>
- Chinie, C., Biclesanu, I., & Bellini, F. (2021). The Impact of Awareness Campaigns on Combating the Food Wasting Behavior of Consumers. *Sustainability*, 13(20), Article 20. <https://doi.org/10.3390/su132011423>
- Ellen MacArthur Foundation. (2015). *Towards the Circular Economy* (Business Rationale for an Accelerated Transition.) [Executive Summary]. Ellen MacArthur Foundation. https://emf.thirdlight.com/file/24/_A-BkCs_h7gfln_Am1g_JKe2t9/Towards%20a%20circular%20economy%3A%20Business%20rationale%20for%20an%20accelerated%20transition.pdf
- Farooq, M., Cheng, J., Khan, N. U., Saufi, R. A., Kanwal, N., & Bazkiaei, H. A. (2022). Sustainable Waste Management Companies with Innovative Smart Solutions: A Systematic Review and Conceptual Model. *Sustainability*, 14(20), Article 20. <https://doi.org/10.3390/su142013146>
- Fishbein, M., & Ajzen, I. (2010). *Predicting and Changing Behavior. The Reasoned Action Approach*. Taylor & Francis Group.
- Fraiberger, S. P., & Sundararajan, A. (2017). *Peer-to-Peer Rental Markets in the Sharing Economy* (SSRN Scholarly Paper 2574337). <https://doi.org/10.2139/ssrn.2574337>
- Gollnhofer, J. F. (2017). The legitimization of a sustainable practice through dialectical adaptation in the marketplace. *Journal of Public Policy and Marketing*, 36(1). <https://doi.org/10.1509/jppm.15.090>
- Gusmerotti, N. M., Corsini, F., Borghini, A., & Frey, M. (2019). Assessing the role of preparation for reuse in waste-prevention strategies by analytical hierarchical process: Suggestions for an optimal implementation in waste management supply chain. *Environment, Development and Sustainability*, 21(6), 2773–2792. <https://doi.org/10.1007/s10668-018-0160-9>
- Hazen, B., Mollenkopf, D., & Wang, Y. (2017). Remanufacturing for the Circular Economy: An Examination of Consumer Switching Behavior. *Business Strategy and the Environment*, 26(4), 451–464. <https://doi.org/10.1002/bse.1929>
- Kountouris, Y. (2022). The influence of local waste management culture on individual recycling behavior. *Environmental Research Letters*, 17(7), 074017. <https://doi.org/10.1088/1748-9326/ac7604>

- Miner, K. J., Rampedi, I. T., Ifegbesan, A. P., & Machete, F. (2020). Survey on Household Awareness and Willingness to Participate in E-Waste Management in Jos, Plateau State, Nigeria. *Sustainability*, 12(3), Article 3. <https://doi.org/10.3390/su12031047>
- Panzone, L., Hilton, D., Sale, L., & Cohen, D. (2016). Socio-demographics, implicit attitudes, explicit attitudes, and sustainable consumption in supermarket shopping. *Journal of Economic Psychology*, 55, 77–95. <https://doi.org/10.1016/j.joep.2016.02.004>
- Wilhelmsson, M. (2022). About the Importance of Planning the Location of Recycling Stations in the Urban Context. *Sustainability*, 14(13), Article 13. <https://doi.org/10.3390/su14137613>
- Vincevica-Gaile, Z., Burlakovs, J., Fonteina-Kazeka, M., Wdowin, M., Hanc, E., Rudovica, V., Krievans, M., Grinfelde, I., Siltumens, K., Kriipsalu, M., Aouissi, H. A., Gaagai, A., & Zahoor, M. (2023). Case Study-Based Integrated Assessment of Former Waste Disposal Sites Transformed to Green Space in Terms of Ecosystem Services and Land Assets Recovery. *Sustainability*, 15(4), Article 4. <https://doi.org/10.3390/su15043256>