
The Relevance of Generational Differences in the Disposal of Unnecessary Items from Households in the Context of Municipal Waste Management Rationalization

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Abstract:

Purpose: The amount of municipal waste is steadily increasing, and it seems necessary to take action to remove the products suitable for use from this waste stream and hand them over to those in need. A key issue in waste management is the determination of an appropriate waste treatment hierarchy. The purpose of this article is to identify significant differences depending on the age of consumers in the reasons for disposing of unnecessary items from households.

Design/methodology/approach: The author analyzed the scale of the phenomenon and the reasons for disposing of unnecessary but efficient household items. The survey was conducted in January 2020 using the CAWI method on a representative sample of n=1012 adult Polish citizens aged 18 to 60 years.

Findings: In the case of most of the product categories studied, differences can be observed between the behavior of young and older people. Younger people are much more likely to declare getting rid of things in order to buy better products. Older people are less inclined to get rid of things, if they decide to do it, they dispose of objects due to lack of space.

Practical implications: Knowing which groups of respondents behave less responsibly with unnecessary items, it is possible to adapt the media, the way of argumentation or the form of the message in order to change their habits.

Originality/Value: The article contains a literature review and current research results concerning the analyzed issue.

Keywords: Generational differences, values, waste management.

JEL classification: D12, Q53, Q56.

Papier type: A research study.

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1. Introduction

It can be observed that the amount of municipal waste in Poland is steadily increasing, and this growing stream of waste contains many functional products which have been discarded because they have been replaced by new, better items. Since Poland joined the European Union in 2004, the amount of waste produced per capita in the country has increased by almost 34%, i.e., from 256 to 342 kg. The observed increase in the production of waste results from an increase in the wealth of society and the adoption of certain "western" patterns of behavior, which translates into higher consumption and, consequently, an increased amount of generated waste.

On the other hand, the mean amount of waste produced by a Pole is still as much as 47% lower than the EU average, which in 2019 was 502 kg. These values are projected to level off, resulting in a significant rise in the amount of waste requiring disposal (Tarka, 2021). As early as at the beginning of the 19th century, J.B. Say noted that consumption involves the destruction of utility or the destruction of value (Say, 1960, p. 83). In the process of real consumption, goods wear out and lose value, but this is a several-step process that makes up the total life of the product (Tylec, 1980, 19-20). If a consumer disposes of an efficient good during use it still has a certain value and utility that is wasted if the product is discarded early.

Opposing the irresponsible use of resources requires not only responsible production processes, but first and foremost, it involves limiting the needs and changing consumers' behavior to a more responsible lifestyle. It requires, above all, recognizing the consequences of inappropriate behavior of individuals and creating a system of perception, motivators and proper communication that will convince consumers to change their behavior for a more environmentally friendly one.

The most important legal act of the European Union that harmonizes requirements concerning waste management in all member countries is the Waste Framework Directive 2008/98/EC, 2008. Article 4 thereof defines the waste hierarchy, and the same hierarchy has been introduced in Poland by the Waste Act of 14 December 2012. The legislator assumes the introduction of waste management of a circular nature, enabling the recovery from the waste stream of as many products and raw materials as possible, which can then be reused (Regulation..., 2016). The main function of all legal instruments in the field of waste management should be the prevention of waste generation, only followed by preparation for further use and recycling (Makuch, 2020).

Consumers play a significant role in the transition to a circular economy. Products are used and consumed by people, and the demand they make determines what is manufactured in the world. The circular strategies available to consumers are mainly related to the first six of the ten Rs: refuse, rethink, reduce, reuse, repair, renew. The

main outcomes are, reduce consumption by using less stuff, use goods more intensively, or reduce consumption by using goods longer (Jahren *et al.*, 2020).

Marketing uses the technique of market segmentation - consumers differ in many ways and for this reason it is necessary to adapt communication tools and ways of motivation to a particular market segment. It can be noticed that there are groups that already act ecologically - they throw unnecessary clothes into appropriate containers, donate food to aid organizations, put advertisements about unnecessary items on the Internet. The age of a consumer is an important criterion for market segmentation and the influence of which is noticed by people dealing with marketing. The purpose of this article is to identify significant differences depending on the age of consumers in the reasons for disposing of unnecessary items from households. The article has a research character.

2. Characteristics of Generational Differences

Many publications highlight significant differences between generations born in the first 20-30 years after World War II (referred to as baby boomers) and later generations (roughly born from 1975 onwards i.e., generations X, Y and Z) (Hysa, 2016; Piekutowski, 2020). This part of the article will show the differences between older and younger generations that influence waste management behavior and attitudes.

Eurostat, in cooperation with national statistical offices, conducts the European Survey of Living Conditions of the Population, the aim of which is to provide data comparable for the countries of the European Union on the living conditions of the population. It should be remembered that equivalent annual net income is compared, and its amount depends on the household composition. The lowest equivalent income² is characteristic for Europeans between 18 and 24 years of age - it is 16,967 PPS³, while the highest between 50 and 64 years of age, i.e., 20,843 PPS. Disposable income in PPS for Poland in 2018 was 12,952 and it was the 20th place among 28 EU countries. Similarly to other European countries, people aged 18 - 24 also have the lowest income (10,862 PPS), but Poles have the highest income between the ages of 25 and 49 (12,999 PPS). Between 2008 and 2018, Poland experienced an increase in disposable income of 4,900 PPS (CSO 2019; Dobkowska, 2018, on line). In Poland, income also increases with the level of education.

²According to the methodology adopted by Eurostat, "annual equivalent disposable income" is used to measure the income situation of a household.

³Purchasing Power Standard (PPS) means the common Conventional Currency unit used in the European Union to convert economic aggregates for the purpose of spatial comparisons in such a way as to eliminate differences in the level of prices between member states (as defined in regulation (EC) no 1445/2007 of the European Parliament and of the Council of 11 December 2007 establishing common rules for the provision of basic information on purchasing power parities and for their calculation and dissemination).

According to the Social Diagnosis survey, monthly net personal income per person for people with tertiary degree was 123% more than for people with primary or lower education (Czapiński and Panek, 2015).

The structure of education in Poland today looks very similar to that in highly developed countries. On average across OECD countries, 41% of adults (25-64 year-olds) have an upper secondary or post-secondary non-tertiary degree as their highest level of education, compared to 21% who have not obtained such a degree and 39% who have a tertiary degree. In Poland, by comparison, 6.8% have below upper secondary education, 60.4% have upper secondary or post-secondary non tertiary degree and 32.9% who have a tertiary degree. Among younger adults (aged 25-34), on average in OECD countries, 45% have tertiary education. For comparison, in Poland 42% of people in this age group have tertiary education, and as recently as 2010 it was 37%. People in younger age groups have higher levels of education than people in older age groups (OECD, 2021).

However, the educational attainment of people of retirement age is rising and will continue to rise, and each successive age group entering retirement will have higher and higher levels of education. This is due to the fact that in the years to come, more and more year groups from the educational boom, which began after the change of the system in the 1990s, will move into the category of seniors (Czapiński and Błędowski, 2014).

According to the analysis of Czaplinski, Błędowski (2014), material affluence, measured by the number of electronic goods that senior households have, is statistically significantly lower than the number of goods in the households of younger people. Moreover, an increase in the age of seniors goes hand in hand with decreasing material wealth, especially the number of electronic goods. The material wealth of both seniors and younger households is correlated with the amount of income ($r=0.35$, $p<0.001$), as well as with the level of education ($r=0.36$, $p<0.001$), which determines the wealth. As the number of people with higher education increases in subsequent generations of seniors, the wealth of this group should also increase in the future and, consequently, the gap between seniors and younger generations in material wealth should also decrease (Czapiński and Błędowski, 2014).

While analyzing digital skills, it should be noted that Internet use is common among the youngest Poles aged 18-24 (100% of Internet users) and almost universal among those aged 25-34 (96%). More than half of those aged 55-64 and three quarters of the oldest Poles (65+) do not use the Internet at all (CBOS, 2017). The 2021 study shows that still 71.2% of respondents in the 60+ group do not use the Internet. Only every fifth person 60+ (21.4 percent) uses the Internet systematically (PAP, 2021). Similar trends are indicated by European studies - younger people are definitely more likely to get information from the Internet: 76% of 15-24 year olds, 66% of 25-39 year olds, 54% of 40-54 year olds and only 26% of 55+ year olds.

In comparison, older respondents declare obtaining information from traditional media such as TV (77% from the 55+ group, while from the 15-24 group it is 51%), newspapers (39% vs. 14%) and radio (26% vs. 15%) (European Commission, 2020). Seniors are definitely less open to modern communication technologies than younger generations. We can observe a much worse equipment of the households of seniors with electronic goods. The only electronic device, which is as common in households of seniors as in households of younger people, is a television set. Watching television is also the main way in which seniors spend their free time, and they have much more of it than younger people. Television is more time-consuming than the Internet, not only among seniors but in all age groups. This disparity increases with age, and after the age of 70 nearly 100% of people spend more time watching television than using the Internet. In the case of computer and Internet use, the relationship with age is exactly the opposite (Czapiński and Błędowski, 2014).

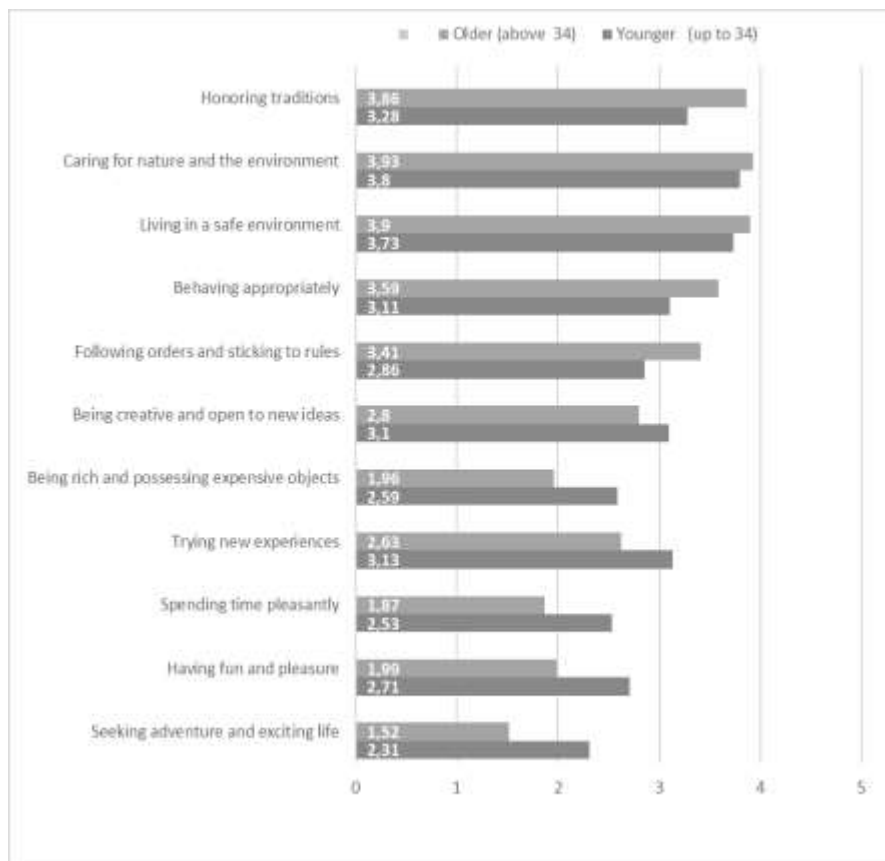
People are guided in their actions by certain values. A value is a specific object or action that is worthy of desire, valued, and activates one to strive to achieve it (Gajda, 1997; Chafas, 2003). Values, therefore, are resources in which man participates, which direct him/her to what is important and valuable, make their existence full of meaning and significance, allowing to be and become. Without values, human life loses its meaning and significance (Popielski, 2008). Different values are held by successive generations. A generation can be defined as a distinguishable group of people who are united by similar time of birth and significant events at critical stages of development (Hysa, 2016).

Piekutowski's research shows that younger and older generations have different values (Piekutowski, 2020). For the purpose of the study of values, he divided the respondents into two groups - up to 34 years old and over 34 years old. It is important to note that there are values that are common to both study groups, i.e.:

- freedom,
- equality,
- helping and caring for other people,
- getting respect,
- loyalty to family and friends.

The values for which there were the greatest differences between the two groups are indicated below on figure 1 (mean value attachment measured on a scale of 1 to 6 was calculated; the graph indicates those values for which the mean difference is greater than 0.1). Values closer to the younger respondents are seeking adventure and exciting life, having fun and pleasure, spending time pleasantly, being rich and possessing expensive objects, trying new experiences, being creative and open to new ideas. Values closer to the older age group are: honoring traditions, following orders and sticking to rules, behaving appropriately, living in a safe environment, and caring for nature and the environment. Younger people have a more hedonistic approach to life, while older people are more eudaimonic.

Figure 1. Generational differences in value attachment (measured on a scale of 1 to 6)



Source: Piekutowski, 2020, p. 19.

European surveys show that 94% of citizens in all EU Member States claim that protecting the environment is important to them. In addition, 91% of citizens said that climate change is a serious problem in the EU. 68% of Europeans are aware that their consumption habits have a negative impact on the European and global environment. Europeans mention climate change (53%), air pollution (46%) and increasing amounts of garbage (46%) as the main environmental problems. Respondents want more to be done to protect the environment, and believe that responsibility should be shared between big business and industry, national and EU governments, and citizens themselves. Those taking part in the survey believe that the most effective ways of solving environmental problems are changing consumption habits (33%) and changing production and trade patterns (31%).

There are differences due to the age of the respondents, but they concern not so much the perception of the importance of environmental protection (it is important for 94% of the respondents aged 15-24, and 94% of those aged 55+), but the areas

which are the subject of the problems, or the media from which they draw their information (European Commission, 2020).

In Polish literature we can find a thesis that concern for nature and environment is stronger in the group of 35+ than in the younger group. Perhaps this is due to the specificity of Poland or Eastern Europe in comparison to other Western countries, where it is the young who are particularly involved in pro-environmental activities. Such a relationship between age and ecological attitudes has been shown in many studies conducted in recent years on ecology and environmental protection. As Poles grow older, their environmental awareness increases, and so does their commitment and willingness to make personal efforts to improve the environment (Batory Foundation Study 2018; Piekutowski, 2020; Blue Media Research, 2021).

3. Research Methodology

The survey was conducted in January 2020 using the CAWI method on a representative sample of $n=1012$ adult Polish residents aged 18 to 60. The sample was controlled in terms of socio-demographic variables: gender, age, size of place of residence. Random-quota sampling related to the specificity of research with the use of the CAWI method applied to on-line surveying. On the basis of data obtained from the Central Statistical Office the demographic structure of people aged 25-60 and over in Poland was determined. Using the formula for the necessary sample size, assuming the previously specified level of significance and the maximum acceptable estimation error, the target sample size was set at 1067 respondents.

Taking into account the earlier information about the structure of the surveyed population, the preferred number of questionnaires that should be addressed to a specific group of respondents was specified. This allowed, in a certain way, to control the research sample due to its structure. Thus the initial assumed size of the research sample was 1067 respondents, and with this size in mind the computer-assisted CAWI interview was conducted.

As a result of subsequent, detailed verification of the obtained information, finally 1012 questionnaires were left for further analysis, which with the initially assumed 95% confidence level increased the estimation error to $d=3.08\%$, which still provides a high level of subject representativeness for the general population under study.

In order to increase the accuracy of quantitative data analysis, the occurrence of the level of statistical significance of the relationship between variables was examined. For this purpose, Mann-Whitney U test, chi square test and Spearman correlation coefficient were used. A detailed categorization of all responses was made taking into account the specificity of the original associations of the respondents expressed in their original transcripts. Table 1 presents the characteristics of the respondents based on the information contained in the particulars.

Table 1. Respondents' socio-demographic characteristics (N=1012)

	Gender	Total (%)
Female		53.6%
Male		46.4%
	Age	
18-34 years		32,8%
35-44 years		30,3%
45-54 years		24,4%
With over 55 years		12,5%
	Place of residence	
Countryside		33,2%
City up to 100,000 inhabitants		34,9%
City with 100,000 to 500,000		19,3%
City with over 500,000 inhabitants		12,6%

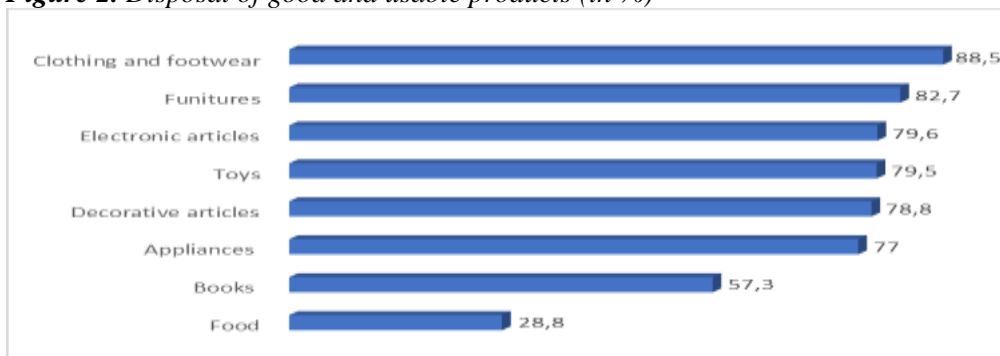
Source: Author's own research.

4. Discussion of Results

The aim of the study was to identify the scale of the phenomenon of disposing of functional items from households and to learn the reasons for such a phenomenon. Another issue was to find out the ways in which consumers dispose of these items. Nine categories of products (both durable and non-durable), which are used in households and comprise the majority of their consumption of material products, were examined. The study excluded products that cannot be safely and hygienically transferred for use by others - such as medicines, cosmetics, hygienic articles, household chemicals. In the questions analyzed, the results do not sum up to 100% due to the option of choosing more than one answer.

The analysis of the results should begin with examining the scale of the problem, i.e. the scale of the phenomenon of disposal of good and usable products by the respondents. Figure 2 presents the declarations of respondents concerning the products they get rid of despite their further usefulness.

Analyzing the results obtained, one can notice a big differentiation depending on the type of the examined product. The next stage of the study included an analysis of the reasons for disposal of serviceable products. The results of the analysis are presented in Table 3. Comparing the reasons for disposing of functional items from households, it may be noted that in the case of most products, it is the purchase of better ones. This could be a confirmation of hyperconsumption, i.e. buying new products despite having goods that can still perform their function. The continuous increase in household consumption makes it necessary to get rid of goods in order to make room for new ones. Only in the case of clothes and shoes, noticeable signs of use are the most significant reason for getting rid of them.

Figure 2. Disposal of good and usable products (in %)

Source: Author's own research, N=1012.

Table 3. Reasons why respondents dispose of good and usable products

Type of products:	Reasons for disposal:					I don't dispose:
	Change in fashion	Traces of use	Purchase of better products	Resale opportunity	Lack of space	
food	3,2%	7,2%	16,1%	8,1%	7,1%	71,2%
clothing, footwear	32,5%	39,8%	36,5%	26,6%	23,7%	11,5%
books	5,2%	9,7%	13,2%	28,2%	24,1%	42,7%
electronic goods	0,0%	19,0%	53,1%	27,1%	9,6%	20,4%
furniture	20,1%	30,7%	41,7%	25,5%	18,1%	17,3%
decorative goods	29,5%	22,3%	29,7%	19,5%	20,3%	21,2%
household appliances	5,8%	20,9%	51,6%	22,8%	10,3%	23,0%
toys	8,1%	18,5%	22,0%	29,9%	39,1%	20,5%

Note: Data do not add up to 100% because respondents could indicate more than 1 answer

Source: Author's own research, N=1012.

Also, it can be noted that some products are disposed of by consumers because they notice an opportunity to resell them further. This is one of the main reasons for discarding books, toys and electronic goods, but it is also important for other product categories. From the point of view of circular economy assumptions, this is a positive phenomenon, because the product does not end up in a dumpster, but is used further. It is worth noting that in the literature, consumption is treated as a sphere of social interaction in which problems of limited resources are solved on a social and household scale (Zalega, 2012). In this way, unnecessary items are made available on the market for the less wealthy, who can satisfy their needs.

5. Differences in Reasons for Disposal

Differences in attitudes towards ecology by age of consumers were the basis for more extensive analyses. It was checked whether statistically significant differences could be observed in the reasons for disposing of these products (results of the

analyses are presented in Tables 4-11). Due to data compilation in a collective table and their legibility, presentation of the number of particular indications was resigned from. However, it is worth noting that in this type of tables there will be cases of large irregularity of indications and lack of indications of particular reasons.

Table 4. Respondents' reasons for disposing of good and usable food vs their age

Reasons for disposing of food:	Age (in years):				Statistical significance:
	reason not indicated		reason indicated		
	M	SD	M	SD	
change in fashion	40,91	10,01	39,59	9,83	Z=0,744028, p=0,456860
traces of use	40,98	10,08	39,44	8,85	Z=1,153522, p=0,248697
purchase of better products	41,20	10,12	39,15	9,22	Z=2,31186, p=0,020786
resale opportunity	41,05	10,09	38,83	8,66	Z=1,770279, p=0,076682
lack of space	40,91	10,04	40,33	9,59	Z=0,371057, p=0,710595
I do not dispose of	38,96	9,14	41,65	10,23	Z=3,72066, p=0,000199

Source: Author's own research, N=1012.

Mann-Whitney U tests conducted showed two statistically significant ($p < 0.05$) differences between the age respondents. In the case of reasons for food disposal, buying better products was indicated by younger people, and not disposing of them was indicated by older people.

Table 5. Respondents' reasons for disposing of good and usable clothes and footwear vs their age

Reasons for disposing of clothes and footwear:	Age (in years):				Statistical significance:
	reason not indicated		reason indicated		
	M	SD	M	SD	
change in fashion	40,91	10,10	40,80	9,81	Z=0,114511, p=0,908832
traces of use	40,95	10,14	40,76	9,80	Z=0,244749, p=0,806651
purchase of better products	41,35	10,10	40,04	9,78	Z=1,971035, p=0,048721
resale opportunity	41,36	10,21	39,52	9,29	Z=2,370533, p=0,017763
lack of space	40,63	9,96	41,64	10,10	Z=1,33432, p=0,182101
I do not dispose of	40,88	9,87	40,82	11,03	Z=0,248085, p=0,804069

Source: Author's own research, N=1012.

Mann-Whitney U tests showed two statistically significant ($p < 0.05$) differences between the age of the respondents and the reasons for disposing of wearable clothes and footwear. Buying better products and the opportunity to resell were indicated by younger people.

Table 6. Respondents' reasons for disposing of good and usable books vs their age

Reasons for disposing of books:	Age (in years):				Statistical significance:
	reason not indicated		reason indicated		
	M	SD	M	SD	
change in fashion	41,05	10,06	37,60	8,33	Z=2,379729, p=0,017326
traces of use	40,96	10,06	40,03	9,40	Z=0,810627, p=0,417580
purchase of better products	40,96	10,08	40,31	9,49	Z=0,610480, p=0,541544
resale opportunity	41,24	10,14	39,94	9,60	Z=1,73592, p=0,082579
lack of space	40,43	9,94	42,25	10,09	Z=2,446406, p=0,014429
I do not dispose of	40,69	9,78	41,11	10,30	Z=0,559183, p=0,576037

Source: Author's own research, N=1012.

Mann-Whitney U tests conducted showed two statistically significant ($p < 0.05$) differences between the age of the respondents and the reasons for disposing of books. Change of fashion was indicated by younger subjects and lack of space was indicated by older persons.

Table 7. Respondents' reasons for disposing of good and usable electronic goods vs their age

Reasons for disposing of electronic goods:	Age (in years):				Statistical significance:
	reason not indicated		reason indicated		
	M	SD	M	SD	
change in fashion	40,87	10,00	-	-	-
traces of use	40,91	10,01	40,69	10,00	Z=0,280195, p=0,779328
purchase of better products	40,52	10,13	41,18	9,89	Z=1,105297, p=0,269032
resale opportunity	41,17	10,21	40,06	9,39	Z=1,35969, p=0,173930
lack of space	40,86	9,97	41,02	10,36	Z=0,087539, p=0,930243
I do not dispose of	41,09	9,89	40,02	10,41	Z=1,524701, p=0,127335

Source: Author's own research, N=1012.

Mann-Whitney U tests conducted showed no statistically significant ($p>0.05$) differences between the age of the respondents and the reasons. In the case of fashion change, there were no subjects in the sample who would indicate this reason.

Table 8. Respondents' reasons for disposing of good and usable furniture vs their age

Reasons for disposing of furniture:	Age (in years):				Statistical significance:
	reason not indicated		reason indicated		
	M	SD	M	SD	
change in fashion	40,94	10,11	40,61	9,56	Z=0,317739, p=0,750683
traces of use	40,52	10,00	41,68	9,98	Z=1,70047, p=0,089043
purchase of better products	41,06	10,11	40,61	9,86	Z=0,651846, p=0,514501
resale opportunity	41,30	10,07	39,62	9,70	Z=2,303694, p=0,021240
lack of space	41,05	10,06	40,08	9,70	Z=1,145395, p=0,252049
I do not dispose of	40,78	9,78	41,33	11,03	Z=0,400460, p=0,688818

Source: Author's own research, N=1012.

The Mann-Whitney U tests conducted showed one statistically significant ($p<0.05$) difference between the age of the respondents and the reasons for disposing of functional furniture . The opportunity to resell was indicated by younger people.

Table 9. Respondents' reasons for disposing of good and usable decorative goods vs their age

Reasons for disposing of decorative goods:	Age (in years):				Statistical significance:
	reason not indicated		reason indicated		
	M	SD	M	SD	
change in fashion	40,67	10,09	41,36	9,77	Z=1,101015, p=0,270891
traces of use	40,71	10,09	41,45	9,69	Z=1,08718, p=0,276957
purchase of better products	40,48	9,86	41,81	10,29	Z=1,873997, p=0,060932
resale opportunity	41,22	10,12	39,43	9,40	Z=2,101494, p=0,035598
lack of space	41,10	10,15	39,96	9,34	Z=1,277151, p=0,201550
I do not dispose of	40,85	9,85	40,97	10,56	Z=0,042687, p=0,965951

Source: Author's own research, N=1012.

The Mann-Whitney U tests conducted showed one statistically significant ($p < 0.05$) difference between the age of the respondents and the reasons for disposing of the decorative goods. The opportunity to resell was indicated by younger individuals.

Table 10. Respondents' reasons for disposing of good and usable household appliances vs their age

Reasons for disposing of household appliances:	Age (in years):				Statistical significance:
	reason not indicated		reason indicated		
	M	SD	M	SD	
change in fashion	40,95	10,00	39,66	10,00	Z=1,001786, p=0,316448
traces of use	40,70	9,99	41,51	10,05	Z=1,00466, p=0,315063
purchase of better products	40,03	10,17	41,66	9,78	Z=2,797919, p=0,005144
resale opportunity	41,04	10,06	40,29	9,78	Z=0,915740, p=0,359804
lack of space	40,98	9,93	39,94	10,61	Z=1,098308, p=0,272071
I do not dispose of	41,17	9,82	39,88	10,54	Z=1,970989, p=0,048726

Source: Author's own research, N=1012.

The Mann-Whitney U tests conducted showed two statistically significant ($p < 0.05$) differences between the age of the respondents and the reasons for disposing of functional household appliances. Buying better products was indicated by older respondents, while not disposing of them was indicated by younger respondents.

Table 11. Respondents' reasons for disposing of good and usable toys vs their age

Reasons for disposing of toys:	Age (in years):				Statistical significance:
	reason not indicated		reason indicated		
	M	SD	M	SD	
change in fashion	40,97	10,05	39,73	9,40	Z=0,987957, p=0,323174
traces of use	41,04	9,94	40,15	10,27	Z=1,187110, p=0,235185
purchase of better products	41,27	10,09	39,47	9,56	Z=2,291600, p=0,021929
resale opportunity	41,52	10,24	39,35	9,26	Z=2,991545, p=0,002776
lack of space	40,32	10,15	41,72	9,72	Z=2,354314, p=0,018558
I do not dispose of	40,84	9,72	40,98	11,05	Z=0,167654, p=0,866855

Source: Author's own research, N=1012.

Mann-Whitney U tests conducted showed three statistically significant ($p < 0.05$) differences between the age of the respondents and the reasons for disposing of functional toys. Buying better products and the opportunity to resell were indicated by significantly younger subjects, and lack of space was indicated by significantly older subjects.

Depending on the product considered, the reasons for disposing of the product from households are different. Additionally, the age of the respondent has an impact on this process. Table 12 summarizes the differences resulting from the age of the respondents.

Table 12. Differences in reasons for disposal of good and usable products by younger and older respondents

	The younger	The older
Food	Better products	They do not dispose of
Clothes and footwear	Better products Resale	–
Books	Change in fashion	Lack of space
Electronic goods	No differences	
Furniture	Resale	–
Decorative goods	Resale	–
Household appliances	Better products	They do not dispose of
Toys	Better products Resale	Lack of space

Source: Author's own research, N=1012.

Analyzing the data concerning the reasons for disposing of functional products from households, one may notice that younger persons more often indicated purchasing better products and the possibility to resell them as the reason for disposal. Older people more often declare that the reason for disposal is lack of space and that they do not get rid of products. These differences may result from generation differences (older people are less inclined to get rid of things) and different life situations. Younger people are more willing to buy new things, but a positive phenomenon is that they just as often declare the willingness to resell unnecessary products. Thanks to this, resources are not wasted, because these items continue to be used, and only their user changes.

Older people more often notice the problem of lack of space, which prompts them to get rid of some of the items they own. This seems puzzling, since statistical data shows that housing conditions of the elderly are better than those of younger people. If measured by the space per household member, the situation of seniors is more than 40% better than that of younger people (35 m² vs. 24 m² per person, respectively). In the group of seniors, the surface area per person increases with age, which is a result of a decrease in the number of household members (due to the death of a partner and/or children moving out to their own apartment) (Czapiński

and Błędowski, 2014). Perhaps older people feel a greater need to organize the space around them - they inevitably accumulate a lot of items such as just books and toys over the course of a lifetime, and they may feel that they no longer need them.

However, it is worth noting that older people are much less likely to take advantage of the opportunity to resell unnecessary items. The reason may be lower knowledge on the possibilities of reselling the products, but also poorer skills of operating the Internet or applications in cell phones. In recent years, portals where one can offer used items have been developing in Poland, but their use requires skills in using new technologies.

6. Conclusion

In the case of most of the product categories studied, differences can be observed between the behavior of young and older people. Knowing which groups of respondents behave less responsibly with unnecessary items, it is possible to adapt the media, the way of argumentation or the form of the message in order to change their habits.

Older people are less inclined to get rid of things, if they decide to do it, they dispose of objects due to lack of space. Reaching this group with information is possible through traditional media such as television, newspapers or radio. The message should reinforce pro-environmental attitudes and inform about ecological ways of discarding unnecessary items - especially about the possibility of their further resale or transfer to collection points from which they will be distributed to people in need.

Younger people are much more likely to declare getting rid of things in order to buy better products. Younger people are better educated and better off than older people, their households are better equipped with modern technological solutions, which results from greater openness to purchasing market novelties and following fashion. And it is precisely younger people who have the problem of consumerism, who show less concern for the environment, and are more inclined to try new things and get rid of the unnecessary ones. Undoubtedly, such behavior causes an increase in municipal waste, related to packaging of new products, but also the necessity to dispose of some products replaced prematurely.

Younger people use different media than the elderly, so the message may reach them via the Internet. However, also in this area differences can be observed, i.e. for the group 15-24 it will be Facebook and Instagram, while for the group 25-39 - Facebook and YouTube. In the messages addressed to them, it is worth emphasizing the negative impact of excessive consumption on the environment and informing about ecological ways of getting rid of unnecessary items. The assumption of a circular economy is to keep objects in circulation as long as possible, i.e. in use. Undoubtedly, the tendency of young people to resell unnecessary objects is a positive phenomenon, but unfortunately many unnecessary products are still thrown

away. This problem requires further analysis and will be discussed in future publications.

References:

- Batory Foundation. 2018. *Jaka jest Polska? Wyniki sondażu*. Warszawa.
- Blue Media Research. 2021. *Raport Postawy ekologiczne - badanie postaw i opinii Polek i Polaków*. Warszawa.
- CBOS. 2017. *Korzystanie z internetu, Komunikat z badań nr 49/2017*. Warszawa.
- Chałas, K. 2003. *Wychowanie ku wartościom. Godność, wolność, odpowiedzialność, tolerancja*. Wydawnictwo Jedność. Lublin – Kielce.
- CSO: Główny Urząd Statystyczny. 2019. *Incomes and living conditions of the population of Poland – report from the EU-SILC survey of 2018*. Warsaw.
- Czapiński, J., Błędowski, B. 2014. *Aktywność społeczna osób starszych w kontekście percepcji Polaków. Raport tematyczny, Rada Monitoringu Społecznego*. Warszawa.
- Czapiński, J., Panek, T. 2015. *Diagnoza Społeczna, Rada Monitoringu Społecznego*. Warszawa.
- Dobkowska, A. 2018. *Dochody Polaków na tle Europy*. <https://www.locja.pl/raport-rynkowy/dochody-polakow-na-tle-europy>.
- European Commission. 2020. *Attitudes of Europeans towards the Environment*. <https://europa.eu/eurobarometer/surveys/detail/2257>.
- Gajda, J. 1997. *Wartości w życiu człowieka: prawda, miłość, samotność*. Wydawnictwo Uniwersytetu Marii Curie Skłodowskiej. Lublin.
- Hysa, B. 2016. *Zarządzanie różnorodnością pokoleniową. Zeszyty Naukowe. Organizacja i Zarządzanie. Politechnika Śląska no 97, 385-398*.
- Jahren, S., Vibeke, S., Nørstebø, N., Simas, S.M., Wiebe, S.K. 2020. *Study of the potential for reduced greenhouse gas emissions and the transition to a low-emission society through circular economy strategies*. SINTEF Industry.
- Makuch, K. 2020. *Wykorzystanie odpadów w energetyce. Cele hierarchii sposobów gospodarowania odpadami*. In: *Paradoksy ekologiczne, Odpady miarą sukcesu i porażki cywilizowanej ludzkości*. (eds.) Sadowski, R.F., Kosieradzka-Federczyk, A. KSAP, Warszawa.
- OECD. 2021. *To what level have adults studied? In: Education at a Glance 2021: OECD Indicators*. OECD Publishing, Paris, 38-51.
- Piekutowski, J. 2020. *Mapa polskich różni*. Wyd. Laboratorium, Warszawa.
- Polska Agencja Prasowa. 2021. *Nawet 70 procent seniorów nie korzysta z internetu*. Polska Agencja Prasowa SA (pap.pl).
- Popielski, K. 2008. *Psychologia egzystencji. Wartości w życiu*. Wydawnictwo KUL. Lublin.
- Say, J.B. 1960. *Traktat o ekonomii politycznej, czyli prosty wykład sposobu, w jaki się tworzy i rozdziela bogactwa*. PWN, Warszawa.
- Tarka, A. 2021. *Polacy produkują coraz więcej odpadów komunalnych – raport*. Rzeczpospolita.
- Tylec, B. 1980. *Mierzenie konsumpcji realnej*. IHWiU, Warszawa.
- Zalega, T. 2012. *Konsumpcja. Determinanty. Teorie. Modele*. PWE, Warszawa.