INNOVATIVENESS OF SENIOR CONSUMERS' ATTITUDES – AN ATTEMPT TO CONDUCT SEGMENTATION

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Abstract

Research background: Ageing societies is a global phenomenon. In the media and the press, there strongly exists a stereotype of elderly people being poorly adjusted to social change, lonely, poor and not open to market novelties. However, an in-depth description of the senior consumer market segment shows their high degree of variety and differentiation in their approach to purchasing product innovations.

Purpose: The aim of the article is to present a model of segmentation of older people according to the criterion of their attitudes towards innovation on the FMCG market.

Research methodology: The source of information for building the typology was personal interviews conducted in 2018 with people aged over 60 in Greater Poland (the Wielkopolska region). The selection of respondents (the sample consisted of 1,451 people) was carried out using the quota selection method. The K-means clustering algorithm was applied to classify the respondents into clusters.

Results: The research procedure allowed for the identification of different segments of senior consumers: reluctant conservatives, knowledgeable traditionalists, aspiring withdrawn/passive, unaware practical and rational innovators.

Novelty: The results of the analysis of the segmentation of senior consumers confirm that people actively interested in product innovations on the FMCG market constitute a relatively small part of the elderly population (18.0%) and that there is a clear relationship between the attitude towards innovation and the characteristics of consumers in terms of economic, demographic and social variables.

Keywords: consumer behavior, senior consumer segment, product innovation, elderly people

JEL classification: D12, D91, J14, O39

Introduction

Over the last 30 years in Poland, demographic development has slowed down and significant changes in the age structure of its inhabitants have occurred. The ongoing process of the ageing of the Polish population resulting from a favourable phenomenon, namely the extension of life expectancy, is aggravated by low fertility levels.

At the end of 2018, the population of Poland was 38.4 million, including more than 9.5 million people aged 60 and over (approx. 25%). The share of people aged 60 and over in the general population increased from 14.7% in 1989 to 24.8% in 2018 (an increase of 3.9 million people). In the subpopulation of older people, the largest group (almost one-third) are 60–64-year-olds and over the last 25 years their number has increased by more than half; an increasing number of people are also at least 80 years of age (17.5%). By 2050, the number of people aged 65 and over is expected to increase to 11.1 million (*Population forecast for 2014–2050*, 2014).

Table 1. Number of older people and structure in Poland in 2018

	Population	Percent
In all	38,411.2	
Including persons 60 years and more	9,508.4	24.75
60–64	2,776.0	29.20
65–69	2,413.0	25.38
70–74	1,595.9	16.78
75–79	1,057.7	11.12
80–84	876.5	9.22
85 and more	789.3	8.30

Source: information on older people in Poland for 2018, 2019.

The growing number of older people in Poland is conducive to undertaking research in many scientific disciplines aimed at describing and understanding consumer behaviour due to ageing. Many researchers take the effort to acquire knowledge about the specifics of decision making in the purchasing process of older people. Numerous studies have shown that human ageing has a radical impact on consumption and shopping behaviour (Drolet, Jiang, Mohammad, Davis, 2019; Carpenter, Yoon, 2011; Mata, Schooler, Rieskamp, 2007).

The market decisions of seniors are mostly the result of the biological, social and psychological ageing process, significant events in the lives of older people (e.g. reduction of the number of people in a household, retirement), and life circumstances, experienced collectively by senior consumers (technological, economic and social transformations).

Observations of the purchasing behaviour of older people in Poland show that these are market-active people, which is indicated by their highly frequent shopping. They treat everyday shopping as a ritual that gives them pleasure, providing sensory experiences, and as a way to keep fit and maintain good physical condition (Bombol, Słaby, 2011, p. 166). Research results also show that seniors are rational, practical, but somewhat lost in terms of the range of commercial offers, and they are moderately interested in changes in the commercial environment and in increasingly significant health trends (Olejniczak, 2019). Their closest family, children, and siblings mostly influence and determine their purchasing decisions, although at the same time senior consumers clearly emphasise that their own knowledge and experience are their main sources of forming opinions about products (Świtała, 2011; Zalega, 2016).

Polish seniors are, however, traditionalists in their approach to purchasing product innovations; the picture of their consumer behaviour indicates a limited level of innovation. The Institute of Market, Consumption, and Business Cycles Research (in Polish: Instytut Badań Rynku, Konsumpcji i Koniunktury) study carried out in 2014 (Szepieniec-Puchalska, Szymańska, 2016) confirmed the scepticism of seniors towards new products and showed that as many as 65% of respondents declare no interest in them and, consequently, make no purchases of new products and services. The assessment of the reluctance of older people towards innovation is complemented by the results of research carried out as part of the National Bank of Poland project. 60% of respondents aged 60 and over express negative attitudes towards new products, while only one in three agree with the opinion that they like new products.

The diversity of the ageing process, as well as different events and life circumstances in the lives of older people, mean that their behaviour is characterised by dynamism and a high level of diversity; they are both difficult to interpret and ambiguous. One way to deepen consumer information is to group it and, as a consequence, undertake further profiling. As early as in the 1980s, it was pointed out that analysing consumers as one category based on the age criterion may result in the loss of a great deal of relevant information. In the literature, the prevailing view is that no other consumer market has a stronger justification for the necessary segmentation than the market for older people – it is emphasised that the differentiation of the lifestyle, needs and consumption habits of seniors clearly intensifies with age (Greco, 1986; Moschis, 1996).

The first segmentation of seniors, based on simple criteria, was conducted as far back as the 1970s in the United States. Over the years, many authors have made efforts to ascertain the factors determining consumer behaviour and created segments based on different criteria.¹

¹ A review of the literature indicates the existence of many different approaches to the market segmentation of older consumers e.g. Bombol and Słaby (2011), Bone (1991), Sudbury and Simcock (2009).

The first segmentations were built on the chronological age of consumers, while in the following years; the divisions were mainly based on a broader scope of socio-demographic variables (gender, education, income, place of residence). Many typologies of elderly consumers were developed to deepen the understanding of the purchasing behaviour of specific products, and in the 1990s, segmentations built on the basis of personality criteria and diverse lifestyles became popular.

Elder consumers are more heterogenic and complex than younger consumers (Kirchmair, 2005; Pak, Kambil, 2006; Silvera, Meyer, Laufer, 2012) in their preferences, motives, and spending behaviours (Moschis, Ünal, 2008) because the younger ones are still unified by their career cycles, beginning a family, educating their children and the global technology and media culture (Thompson, Thompson, 2009). In fact, senior consumers seem to becoming more and more heterogeneous and segmented (Gassmann, Reepmeyer, Walke, 2005). To satisfy the different requirements of this heterogeneous group, it needs to be divided into several target groups, which are very similar within but heterogeneous across them. A wide review of literature made in Oeser, Aygün, Balan, Paffrath and Schuckel (2019) indicates that a segmentation that simultaneously considers several relevant dimensions of the aging process and the circumstances (gerontographics) (Moschis, 1996; Moschis, Curasi, Bellenger, 2004; Le Serve, Chevalier, 2012) seems more purposeful.

One of the popular typologies of seniors (gerontographics) was proposed by G. Moschis, where he showed that differences in the motivation and needs of older people are the result of the following factors: the ageing process in the biological, psychological and social dimensions, the circumstances pertaining to the lives of older people, and events that they have experienced during their lifetimes (Moschis, 2012).

Gerontology suggests that older adults who have experienced similar circumstances later in life (i.e. social, psychological, and biophysical changes, as well as life and other environmental changes) may show similar behavioural patterns (Moschis, 1993). The effect of this is to build a segmentation model in which the segments were determined *a priori* on the basis of knowledge of the behaviour of older people. Based on a series of studies, four segments of mature groups have been identified that vary depending on the extent and type of ageing experienced (Moschis, 2003; Moschis, Lee, Mathur, 1997):

1. "Healthy Indulgers" – people who have gone through the least number of negative events in their lives, enjoy good physical and mental health and actively participate in social life.

2. “Ailing Outgoers” – a group of elderly people who have experienced health problems but managed to maintain a high level of life satisfaction.
3. “Healthy Hermits” are relatively healthy seniors who have gone through difficult times, which affected their mental well-being and led to social withdrawal.
4. “Frail Recluses” are people with chronic illnesses who have suffered various adverse life events; they usually live in isolation and have relatively low physical fitness and poor psychological well-being.

The gerontographics model has proved useful in determining the preferences of older consumers in relation to financial services, purchases of food and clothing, the use of commercial and restaurant services, tourist services, the purchase of housing, health products and the use of the Internet (Correia, Elliott, 2006; Gonzalez, Paliwoda, 2006; Moschis, Lee, Mathur, 1997; Nimrod, 2013).

The review of literature indicates that research on the attitudes of older people towards innovations is taken occasionally – most often concern attitudes towards technology – there is no research on the behavior of seniors on the FMCG product market (Halmedienst et al., 2019; Vorrington et al., 2017; Gell, Rosenberg, Demiris, LaCroix, Patel, 2013). As part of the discussion, a hypothesis was formulated: the attitudes of consumers of seniors against innovation (interest and buying) are strongly diverse and dependent on subjective well-being.

1. Applied research methods

The purpose of the article is to present a model of segmentation of older consumers based on the criterion of attitudes towards product innovations on the FMCG market. The source of information for building the typology was personal interviews conducted in 2018 with people aged over 60 in Greater Poland (the Wielkopolska region). The selection of respondents (the sample consisted of 1,451 people) was carried out using the quota selection method, and the structure of the research sample according to the criterion of gender and age was the same as the structure of the elderly population in Greater Poland.²

Information on senior consumers collected during the research process allowed for the development of a typology of consumers based on their attitudes (understood as the sum of cognitive, affective and behavioural components) towards innovation. In determining the segments according to the innovation criterion, a non-hierarchical cluster analysis (a method

² Based on the statistical chi-square (χ^2) test, the p-value was calculated, which was 0.74 (age) and 0.99 (sex), respectively. The values indicate that the structure studied is the same as the structure (age and gender) of older people in Wielkopolska (p-value > 0.005).

of grouping elements using k-means) was used; this method belongs to the group of optimal division, the essence of which can be reduced to iterative mapping of all units to an *a priori* defined number of k segments (Rószkiewicz, 2002, p. 236; Raykov, Boukouvalas, Baig, Little, 2016) It is underlined in many publications that that method is characterised by a high degree of accurate linking of units in clusters in comparison to other used hierarchical methods (Olejnik, Skikiewicz, 2013, p. 87).

The segmentation of seniors by means of the k-medium method was carried out on the basis of criteria describing their level of innovation (interest in product innovations – interest in purchase on a scale from 1 to 5, frequency of purchasing product innovations – frequency of purchases on a scale of 1 to 5), increasing the set by psychographic variables (cognitive age – how much you feel and life optimism – will you need help in the future).

The variables used in the analysis present the characteristics of the respondents at the qualitative level of measurement (heterogeneity of the measuring scale used), hence their standardisation was carried out in order to bring them to quantitative comparability (mean = 0, deviation = 1). As a consequence, it led to the equalisation of differentiation and level of diagnostic features. After standardisation, the variances of the features are equal to 1, and the arithmetic means to 0. In the next step, the clusters were separated, and the average values for individual components were calculated for the separated clusters.

The first step of the k-means method was to determine the number of clusters. In the cluster analysis, some of the decisions are arbitrary and burden the results with a certain amount of subjectivity. These include the selection of features describing the units of the set, the identification of centres and the determination of the number of clusters (classes), as well as the naming (so-called labelling) of clusters for certain research purposes (Gaczek, Hełpa, Kasprzyk, 1981). With the absence of objective criteria, the method choice was based on Hair (1998) recommendation of a trial process, where researchers compute a number of cluster solutions and then decide among the alternative solutions by using priori criteria, practical judgment, common sense, and theoretical foundations (Hair, Anderson, Tatham, Black, 1998).

The analysis of the literature indicates that the typology of senior consumers is usually based on four to six segments (Olejniczak, 2019). As part of the analytical work, four and six segments were initially identified, but the results did not bring adequate cognitive results; this led to the isolation of a small cluster or merging of units into highly diverse groups. A separate number of clusters (five) means that the groups are clearly distinguished, there are differences between them, and none of the clusters stands out in terms of numbers.

Table 2. Number of observations in each cluster

Cluster	1	379,000	26.1%
	2	304,000	21.0%
	3	277,000	19.1%
	4	194,000	13.4%
	5	297,000	20.5%
Suma		1451,000	100.0%

Source: own elaboration.

After determining the number of clusters by using the k-means method on standardised variables, the number of segments and the distance between clusters was calculated, and the description of the characteristics was given.

Table 3. Ultimate focus centres

Questions	Cluster					Scale increase
	1	2	3	4	5	
How interested are you in innovative, NEW products?	-0.67050	0.59749	1.21626	-0.12127	-0.87159	increased interest
Do you buy/pay for innovative products/services?	-0.30891	0.45685	-0.81895	-0.45932	1.21333	reduction of shopping frequency
Cognitive age: Considering your age, you consider yourself a person...	0.42519	-0.52405	0.89551	0.24969	-1.17334	better mood
Thinking about the coming years – do you think that:	-0.65648	-0.11362	-0.85009	1.38911	0.78913	greater pessimism about the future

Source: own elaboration.

The results obtained from the non-hierarchical cluster analysis, and in particular the matrix of distances between centres, allow for the indication of the clusters which are furthest “from” the others – namely clusters 3 and 5.

Table 4. Distances between final cluster centres

Cluster	1	2	3	4	5
1		1.841	2.020	2.131	2.646
2	1.841		2.137	2.053	1.992
3	2.020	2.137		2.711	3.931
4	2.131	2.053	2.711		2.397
5	2.646	1.992	3.931	2.397	

Source: own elaboration.

2. Research findings

The segmentation procedure used led to the identification of five groups of consumers characterised by a different approach to product innovations on the FMCG market, as well as determining their size in the population.

Table 5. Senior consumer segments according to the criterion of behavioural innovativeness on the FMCG market

Cluster 3	Cluster 1	Cluster 4	Cluster 2	Cluster 5
Rational innovators	Unaware practical	Aspiring withdrawn	Knowledgeable traditionalists	Reluctant conservatives
Moderately interested in innovation, sometimes buyers, positive attitude to the environment, optimists. Feel younger than their calendar age	Uninterested in innovations, buyers out of need, rather positive about the environment, optimists, feel younger than their calendar age indicates	Expressing sporadic interest in innovations but not buyers, they like to take a look at innovations, having a varied view of changes in the environment and their future, they feel that they are as old as their calendar age indicates	They see innovations in the commercial offer but do not buy them, look at changes in the environment from a distance, they want to be modern in their own way, diverse in assessing their future, they feel that they are as old as their calendar age indicates	Withdrawn, they are not interested in new products and do not buy them, sceptical about changes in the environment, pessimistic about their future, feel clearly older than their calendar age
Segment fractions in percent				
19.1	26.1	13.4	21.0	20.5

Source: own elaboration.

The representation of the clusters in the sample was regarded as acceptable as it complied with the characteristics of measurability and substantiality that market segments should have (Kotler, Keller, 2006). Fundamental importance in determining innovation was attributed to the following variables: the degree of interest in new products, the frequency of consumers buying new products, cognitive age – the subjective feeling of age, and level of optimism – assessment of future independence in acting. The proposed variables were characterised by the highest level of diversity in the declarations of senior respondents. The research procedure allowed for the identification of different segments of senior consumers:

- reluctant conservatives (seniors withdrawn in relation to changes in the environment, not interested in innovation, who very rarely or never buy new products, and look ahead with pessimism),
- knowledgeable traditionalists (older people with a sober view of their lives, who do not buy new products due to traditionalism, but notice new products in the commercial

- offer; they are rather indifferent to changes in the environment, although they have positive opinions about themselves),
- aspiring withdrawn/passive (seniors with a diverse approach to innovation, interested, sometimes buyers, but still withdrawn, looking at the changing reality with a sense of worry, considering themselves traditionalists),
 - unaware practical (elderly people with a practical approach to shopping, who are not interested in new products, but buy them when they need them, moderately open to changes in the environment, looking optimistically at the present and future)
 - rational innovators (interested in new products, but only sometimes buy them, buying innovations is reasonable, very positive about the future, feeling younger than indicated by their chronological age, approving changes in the environment and considering themselves modern).

The typology obtained is a clear confirmation of the high diversity of the purchasing behaviour of older people. At the same time, it turns out that the groups of consumers which are active and passive respectively towards product innovations on the FMCG market are of comparable size (19.1% and 20.5%, respectively).

Consumers from the distinguished segments clearly differ in terms of the level of innovation, measured by the interest in and declarations of purchasing new products. The most innovative attitudes towards innovation characterise the group of so-called rational innovators, who most often show interest in new products on the FMCG market relative to other groups.

Over 90% of respondents (93.5%) declare that they are interested in and collect information about new products appearing on the market regularly or sporadically (Figure 1).

However, only half of them eventually become buyers of new products, while the other half do not buy new products or only rarely purchase them. This moderate translation of shopping intentions into actual purchases may result from the rationality of decision making by seniors, their caution and reflexion in purchasing activity. The moderate level of innovation of the senior segment most open to innovation is also visible in the frequency of new purchases: the largest group (53.1%) sometimes makes purchases, and 41.9% of respondents make purchases either often or very often (Figure 2).

The “unaware practical” segment in the vast majority shows a lack of interest in innovation (83.1%), which, however, does not prevent almost 60% of members of this group from buying market novelties in a specific situation or out of necessity. This correlates with the results of the frequency of purchases of innovations of FMCG products, because 60% of the “unaware practical” group declared that they sometimes buy market novelties, while 28.8% do so often or

even very often (Figure 2). This group of respondents is surely not fully aware of the presence of new products on the FMCG market in their shopping cart.

Figure 1. Interest in new products in individual segments of senior consumers on the FMCG market

Source: own elaboration.

Figure 2. Frequency of purchasing new products in individual segments of senior consumers on the FMCG market

Source: own elaboration.

In contrast, the “aspiring withdrawn” group is strongly diversified in their attitudes: on the one hand, almost 60% of them declare an interest in innovation (Figure 1), but this translates into shopping for innovation to a small extent: 33.9% buy such items rarely, and 42.7% only occasionally (Figure 2). “Oriented traditionalists” are “market observers” to the greatest extent: the largest group of them notice new FMCG products (58.8%), and almost one in four (20.6%) is even interested in them (see Figure 1). However, as indicated by the results of the declared frequency of purchases, almost 90% of them rarely, very rarely or never purchase innovative products. “Reluctant conservatives” unambiguously and definitely declare no interest in new products (86.4%); at the same time, 65% of them indicated that they make such purchases very rarely, and most often not at all (Figure 2).

However, the richest panorama of diversity in the behaviour of senior consumers is provided by the description of the profiles of the different segments in terms of the demographics, economic and social variables characterising the population studied.

Table 6. Profiles of individual segments of senior consumers on the FMCG market (%)

Variables		Rational innovative	Practical unaware	Aspiring withdraw	Knowledgeable traditional	Reluctant conservatives
1		2	3	4	5	6
Sex	female	63.5	61.4	59.7	55.3	47.1
	male	36.5	38.6	40.3	44.7	52.9
Residence	countryside/village	15.4	25.8	21.4	18.6	29.3
	town up to 100,000 residents	38.2	34.8	35.5	36.6	34.8
	city 101–250,000 residents	13.8	11.5	20.9	18.3	12.9
	city over 250,000 residents	32.5	27.9	22.2	26.5	23.0
Age	60–64	56.5	48.6	44.4	26.8	11.8
	65–69	18.8	25.7	29.0	32.1	30.1
	70–74	15.0	13.2	13.3	18.8	21.0
	75–79	5.0	5.3	5.6	11.2	19.5
	over 80	4.6	7.2	7.7	11.2	17.6
Education	primary	3.6	2.7	9.8	8.3	13.7
	vocational	17.3	24.5	34.0	32.0	39.9
	secondary	40.2	41.3	27.7	34.8	24.3
	bachelor	14.5	13.4	14.0	9.5	13.7
	master level	24.5	18.1	14.5	15.4	8.4

	1	2	3	4	5	6
Financial situation	there is not enough money for basic everyday expenses	1.6	2.0	0.8	2.7	4.1
	we only have the money for basic expenses	5.7	11.4	12.6	17.4	23.8
	we live to pay for basic products, we can afford more shopping sometimes	28.0	31.7	33.2	33.9	37.2
	we live sparingly, we have enough basic products, and we can even spend on pleasure	32.9	33.7	29.8	27.9	23.4
	we live very well, it's enough for everything we need, even for pleasure	31.7	21.2	23.5	18.0	11.5
Social activity – meetings with family and friends	very often	42.9	37.5	44.7	33.0	36.5
	often	44.0	44.4	37.0	43.2	37.6
	sometimes	10.4	11.7	11.4	18.2	15.4
	rarely	2.3	4.8	5.7	4.8	8.3
	never at all	0.4	1.6	1.2	0.9	2.3
Social activity – meetings University of the Third Age, senior club	very often	8.5	6.1	8.9	5.4	7.8
	often	15.9	16.6	13.4	10.7	11.6
	sometimes	33.3	32.9	19.9	11.3	10.4
	rarely	11.6	12.8	18.3	17.9	15.7
	never at all	30.6	31.6	39.4	54.8	54.5

Source: own elaboration.

As one might think, the biggest differences between segment profiles are between “rational innovators” and “reluctant conservatives.” “Rational innovators” are primarily women, younger seniors (usually under 65 years of age), with secondary and higher education. In addition, “rational innovators” more often live in towns and cities (both up to 100,000 inhabitants and in agglomerations over 250,000 inhabitants), and declare a relatively better financial situation than the other groups of seniors (over 60% of them can afford to spend for pleasure). Seniors in this group show a high degree of social activity: they often participate in family gatherings, and more than one in five of them is a student of the University of the Third Age or a participant in meetings in senior clubs. In turn, the profile analysis of the “reluctant conservatives” segment indicates that these slightly more often tend to be people over 70, although one-third are slightly younger (65–70 years old); compared to the total number of respondents, male representation is slightly higher.

Members of this segment slightly more often live in rural urbanised centres and towns of up to 100,000 residents (although approximately one quarter of them (23%) live in a city of over 250,000 inhabitants). The “reluctant conservatives” are distinguished from other segments by a much worse financial situation: over one in three live sparingly and can sometimes afford larger and better purchases, yet a significant proportion of this group (27.9%) spends funds only on basic products and services. The vast majority of traditionalists actively participate in meetings with family and friends, but at the same time are socially passive.

When analysing the characteristics of the obtained profiles of the senior segments, one should note the remarkable similarity – according to demographic, economic and social features – of the two segments: “unaware practical” (who sometimes buy innovations, although completely ignoring their presence in the commercial space) and “aspiring withdrawn” (rarely buyers, though they show moderate interest in new products, and rather refrain from assessing changes in the environment).

Conclusions

Despite the similarities in demographic, economic and social dimensions, the attitudes of members of both segments towards product innovations on the FMCG market are completely different – the features not specified in the study (personality, lifestyle-related) probably also determine their behaviour towards new products. When analysing selected groups of consumers, it should also be emphasised that intermediate types between extreme segments cover over 60% of the elderly population. Their characteristics largely correspond to the size of population averages.

The results of the analysis of the segmentation of senior consumers confirm that people actively interested in product innovations on the FMCG market constitute a relatively small part of the elderly population (19.1%) and that there is a clear relationship between the attitude towards innovation and the characteristics of consumers in terms of economic, demographic and social variables.

When comparing the separated segments of consumers of seniors to gerontographics (Moschis, 1996), similarities can be seen: characteristics of cluster the rational innovators is similar to the description Healthy Indulgents (similar to reluctant conservatives to Frail Recluses). Conducting deep-in depth research aimed at capturing the differences between clusters could be an interesting field of further research.

Despite the limitations, the research results undoubtedly have a practical dimension and can be useful both at the stage of creating new FMCG products, as well as in the process of managing the range of products already on the market and their possible changes. Defining the attitudes of older people towards new products may facilitate the implementation of product innovation introduction processes on the market. This provides a lot of information which is necessary to understand the market behaviour of seniors, especially in the context of the intensifying ageing processes of society, which has resulted in a continued increase in the number of people, aged 60 and above. The material collected can be used in the product portfolio management process, both at the stage of initiating and introducing innovations to the market, as well as at the stage of modifying existing products in order to obtain the approval of senior consumers.

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