

Article

Measuring Activity—The Picture of Seniors in Poland and Other European Union Countries

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Abstract: Three interconnected and mutually supporting priority areas of “Europe 2020”, which will continue as priorities until 2030, constitute the idea of sustainable development based on three pillars—economic, environmental and social. The third pillar, related to social inclusion, aims to protect the interests of various social groups, including the growing group of elderly individuals. In this context, the activity of seniors becomes one of the key elements of sustainable development. For many years, it has been advocated that seniors have to be active, not only in terms of their physical activity, but also in terms of the so-called digital/technological inclusion or exclusion. This article attempts to answer the question of whether seniors’ activity in various areas of life (for example, taking into account the components of the Active Aging Index) can translate into a better assessment of their lives. We compare the activity of Polish seniors with their peers from EU countries. By identifying the differences, we try to pinpoint the causes of inactivity and indicate the areas of action necessary to stimulate their activity. Pointing out the disadvantages of the AAI’s construction, which are related to the cultural schemes, traditions, and social conditions of EU countries, we propose an original active aging indicator, which was created using Hellwig’s method and which is based on the results of a pilot study conducted with Polish seniors in 2020. The values of both indicators (AAI and the original) were also used to examine the impact of seniors’ activity on their general life satisfaction. In this part of the study, we used a comparative analysis and a classification method.

Keywords: senior’s activity; active aging; Active Aging Index; classification; Hellwig’s method



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1. Introduction

The growing proportion of seniors in the social structures of the European Union is a recognized and widely discussed phenomenon [1–4]. Its deepening, but also the increase in its pace [5], causes the need for changes in the social and economic policies of EU countries, thanks to which the potential of the growing population of seniors could be properly used. The assumptions and postulations of European strategies are focused on smart, sustainable, and socially inclusive development. With regard to older generations, social inclusion is related to their activity, and to their need for activity, which has been postulated for many years now [6,7]. The inevitable changes in the socio-economic politics of countries with aging populations do not only pose a challenge. Areas of possible development, such as ensuring the longest professional activity possible, ensuring independence for as long as possible, managing seniors’ time, taking care of their health and personal image, ensuring social inclusion, and providing “age-sensitive” financial services, are also noted [7]. In terms of the concept of the silver economy, all of these aspects appear as development opportunities and are inextricably linked to the concept of active aging. It is argued that an active aging approach has the potential to enable countries to respond successfully to the challenges of population aging, because of its comprehensive focus and emphasis on societal as well as individual responsibility [8,9]. In the European Union, active aging is monitored and promoted chiefly by the Active Aging Index, a policy tool in use since 2012.

The Active Aging Index is a tool that facilitates the assessment of seniors' situations in the areas identified as key to ensuring their well-being and positive functioning in society. It may contribute to sensitizing people, including policymakers, to the multidimensionality and complexity of the process of "aging well" [10]. Our article fits into the discussion on the Active Aging Index [11,12], and the study we conducted had a three-stage design, subordinated to the assumed research goals:

1. The verification of the thesis that, taking into account the objective factors which differentiate societies, such as cultural considerations, traditions, or circumstances resulting from the socio-economic situation of the country, can significantly change the value of the AAI index, and can thus change the image of the society of a given country compared to other European Union member states;
2. The proposal of an original active aging index, based on domains and indicators different from the AAI, identified based on a pilot study of Polish seniors;
3. An analysis of seniors' activity in Poland and other European Union countries, based on the AAI values and the original index, with particular emphasis on areas that require activation, as well as in relation to the satisfaction with life declared by seniors.

The article consists of six parts including the introduction, conclusions and discussion, limitations, and future suggestions. In the introduction, the research goals are formulated. The research background and literature review are included in Section 2, where the authors focused on presenting the idea of active aging, its role in the development areas of the European economy, and the possibilities of its measurement, as well as discussing the assumptions of the Active Aging Index and the description of the original index creation's methodology. In Materials and Methods, we use the values of the AAI index calculated for each country of the European Union in 2020 [13], we describe the Hellwig method used to create the original active aging index and we present the scope of our pilot research, the results of which constituted the basis for the construction of the new index. In Section 4, we present the results of our three-way analysis: the impact of changing the weights of individual domains and indexes on the overall result of the country in the AAI ranking, the ranking of EU countries according to the value of the original active aging index and the picture of the activity of Polish seniors compared to their peers from other EU countries, highlighting areas necessary for activation. We also show the impact of active aging on the general sense of seniors' happiness in individual EU countries. In Section 5, we discuss the results of our study with the achievements of other researchers. Finally, we present the limitations of the research and future suggestions.

2. Research Background and Literature Review

Changes in the demographic structure of societies in European Union countries caused by the growing share of older people are a phenomenon that entails the need to adjust many areas of social and economic policy. Population aging is recognized as having an impact on our healthcare systems [14], social security systems [15], but also many other aspects of society, including labor and financial markets, and the demand for goods and services such as education, housing, long-term care, social protection, and information. The issue of the impact of aging societies on the socio-economic area of countries has been raised in many publications [2,3,16–18].

2.1. The Active Aging Concept

The concept of active aging shifts the focus of the discussion, from the consequences of aging from the negative expectations of a growing burden of public costs to the analysis of opportunities of using the potential of older people [19,20].

The active aging approach is based on the recognition of the human rights of older people and the United Nations' principles of independence, participation, dignity, care, and self-fulfillment. It shifts strategic planning away from a "needs-based" approach (which assumes that older people are passive targets) to a "rights-based" approach that recognizes the rights of people to equality of opportunity and treatment in all aspects of

life as they grow older. It supports their responsibility to exercise their participation in the political process and other aspects of community life. Active aging is the process of optimizing opportunities for health, participation, and security in order to enhance the quality of life as people age. Active aging applies to both individuals and population groups. It allows people to realize their potential for physical, social, and mental well-being throughout their life course and to participate in society according to their needs, desires, and capacities, while providing them with adequate protection, security, and care when they require assistance [13] (p. 12). It focuses on well-being, considering the impact of early life experiences on aging. Additionally, it explores the influence of older adults' physical, social, and mental well-being on achieving independence and reducing the need for caregiving [21,22]. Hess et al. [23] found that, in Germany and the UK, active aging has a positive impact on how older people and their participation in society are perceived, diminishing the perception of older people as a "burden".

The "Polska 2030" [24] and "Social policy towards the elderly 2030. Safety-Participation-Solidarity" report states that the concept of activity in the elderly is to be supported mainly after 2020 and will relate (unlike the traditional model of "deactivation") to active life during retirement [25] (p. 17). The main assumptions also put a strong emphasis on the need to reduce the risk of poverty in older people by making use of their potential [24] (p. 276). The impact of socioeconomic status on the level of health and well-being of the seniors leaves no doubts and is the subject of many studies [25–29].

2.2. Activity and Activation

Much attention is paid to the activity and "activation" of seniors by including them in social life in order to prevent their exclusion. For many years, the need to motivate seniors has been postulated, not only in terms of physical activity [30–32], but also in relation to so-called digital/technological inclusion or exclusion [33–35]. Environmental services for seniors, which are not limited to supporting health promotion, are also becoming more important. Research on the quality of seniors' lives (including those that take into account the COVID 19 pandemic period [36]) is becoming a key tool for identifying the needs of an increasing fraction of society. According to Liew, Hussin, and Abdullah [37], if seniors are not active, they become weak. They state that, currently, there is an active generation of seniors (higher disposable income, advanced treatment, openness, and ability to perceive changes in the usage of social and family life). Amaral et al. [30] indicate that seniors are aware of their requirements and demands. Combining this conclusion with the above-mentioned openness, seniors more and more often are motivating themselves to gain new experiences, improving their quality of life, but also their self-esteem, and thus choose the path of active aging [38]. Activity, in the case of old age, is of particular importance, because it significantly affects the satisfaction and condition of a person. Activity is a synonym for life, a constant effort adapted to the capabilities of a given person [39] (p. 33). It is a prerequisite for proper development, enables a creative and harmonious life, is the basis for the treatment of many diseases, and delays the aging process. In deliberations on old age and aging, human activity is a category analyzed regardless of the scientific discipline, culture, or socio-economic conditions. Typically, activity is defined as [40] (p. 93):

- An inborn tendency to act;
- A way of communicating with other people and the surrounding world;
- A way of perceiving reality, as well as the general mental property manifested in physical and mental activities, which is determined by personality factors;
- A prerequisite for proper development, enabling a creative and harmonious lifestyle;
- The basis for the treatment of many diseases;
- A factor that delays the aging process.

Being active in old age can serve many purposes:

- adaptive: helps the elderly to adapt better to living in a new social and family situation;
- integrative: leads to integration in the group to which older people belong and fills in various deficiencies;

- educational: helps to develop and improve personality traits and predispositions;
- recreational and entertainment: eliminates stress, restores the will to live, and fills free time;
- and psychosocial: leads to an improvement in the quality of life, makes it possible to perceive life satisfaction and increases the authority of the individual.

Different types of activities related to the areas of interest of seniors can be distinguished [41]:

- home and family activity, understood as performing various activities related to running a household and the life of the immediate family;
- cultural activity, e.g., reading, watching TV, listening to the radio, using cultural institutions, and senior clubs;
- professional activity, satisfying the need for recognition and usefulness; it also protects against lowering the social position, improves well-being as well as self-assessment of health, and facilitates so-called cultural self-definition;
- social activity, an otherwise active activity for the environment;
- educational activity, helping an elderly person in continuous self-improvement (learning in old age becomes, not only an exercise of the mind and memory, but also a pleasure, in exploring new topics and meeting new people);
- religious activity, the importance of which increases with age, as well as the possibility of participating in its rites;
- recreational activity, related to leisure and favorite activities performed for pleasure (different forms of recreation, such as tourism, sports activities, games, club activities, and hobbies).

As can be seen, the motivation of seniors should not and does not have to refer only to prolonging their presence in the labor market. Ramia and Voicu [42] indicated that activity outside of the place of residence, as well as being active in multiple areas, could positively impact the level of seniors' life satisfaction. An important element of well-being in later life is also creativity (as a part of activity), thanks to which seniors have a sense of meaning in life [43]. This is an area that the authors have yet to explore in any way.

The concept of general activity is usually understood as [44] (p. 149) "mobilizing the whole organism, while selective (targeted) activity is an increase in the level of physical, mental, creative, professional, educational, religious or sexual activity". We can define it as a set of activities aimed at involving a person in various areas of life, leading an active lifestyle, or a process aimed at increasing general and selective activity. The purpose of "activation" is primarily to draw attention to its following components:

- maintaining physical and health fitness: gymnastics, walks, physical games, and rehabilitation;
- becoming independent, stimulating resourcefulness: using various activities related to personal hygiene and developing hygienic habits;
- learning to live together in a group and in the environment: shaping positive personality traits, a culture of everyday life, the ability to establish contacts with peers, neighbors, etc.;
- maintaining (or stimulating) faith in the meaning of life;
- developing different interests;
- stimulating the processes of imagination and creative activity.

Being active not only "adds years to life", but also "life to years lived". Well-organized activity, in the initial phase, already triggers a positive perception of the prospects of later life, helps to maintain an independent lifestyle, and changes for better the well-being and morale of people taking advantage of it. Active people are calmer and less demanding, they rest better, regain self-confidence and self-esteem, and interact with the environment faster [45] (p. 99).

2.3. Active Aging Index

The well-described and widely discussed measure of seniors' activity can be seen, for example, in the Active Aging Index. The Active Aging Index (AAI) is a project managed jointly by the European Commission's Directorate General for Employment, Social Affairs and Inclusion (DG EMPL), and the Population Unit of the United Nations Economic Commission for Europe (UNECE). The Active Aging Index is a tool to measure the untapped potential of older people for active and healthy aging across countries. It measures the level to which older people live independent lives, participate in paid employment and social activities, and their capacity to age actively. Therefore, the index value is calculated on the basis of four domains containing a set of indicators [46]:

1. Employment:
 - 1.1. employment rate in age group 55–59;
 - 1.2. employment rate in age group 60–64;
 - 1.3. employment rate in age group 65–69;
 - 1.4. employment rate in age group 70–74.
2. Participation in society:
 - 2.1. voluntary activities;
 - 2.2. care to children and grandchildren;
 - 2.3. care to older adults;
 - 2.4. political participation.
3. Independent, healthy, and secure living:
 - 3.1. physical exercise;
 - 3.2. access to health and dental care;
 - 3.3. independent living;
 - 3.4. relative median income;
 - 3.5. no poverty risk;
 - 3.6. no severe material deprivation;
 - 3.7. physical safety;
 - 3.8. lifelong learning.
4. Capacity and enabling environment for active aging:
 - 4.1. remaining life expectancy at age 55;
 - 4.2. share of healthy life expectancy at age 55;
 - 4.3. mental well-being, use of ICT;
 - 4.4. social connectedness;
 - 4.5. educational attainment.

Each domain and indicator has an assigned weight. Based on the values of indicators and weights in each domain, it is possible to calculate the value of the AAI index.

3. Materials and Methods

In our study, we took into account data on the value of the AAI index for each of the European Union countries for 2020 (no more recent data are available), data from the Eurostat database (also from 2020) containing respondents' answers regarding life satisfaction in general, and also the data necessary to build an author's index of seniors' activity (see Section 4.2). Although Eurostat data are aggregated, it is possible to extract the data that relate to the age group of interest to us. As shown by the Eurostat metadata file, the data are representative. The first stage of our research consisted of an extensive analysis of seniors' life situation in Poland [47–49] and the adjustment of the weights of the AAI index to its specificity. In this way, new AAI values for Poland were calculated, while those calculated for other countries remained unchanged. In this research stage, we aimed to achieve the first research goal. We have shown the influence of various social factors, traditions, and culture on the values of the AAI index.

In 2020, just before the outbreak of the COVID-19 pandemic, we conducted a survey among seniors. The respondents were selected from a sample of people aged 65 years and older (57 individuals). The survey was conducted in three regions of Silesia in Poland (NUTS2): Dolnośląskie (PL51), Opolskie (PL52), and Śląskie (PL22). A snowball technique was applied when choosing the next interviewee. The reason for using this technique has several crucial aspects, one of these being the desire to prevent respondents' fear keeping from completing the surveys. Seniors are reluctant to fill out questionnaires because of fear of misunderstanding or questions being overly complex. If they know that a friend has completed the survey, agreeing to participate in the study is easier for them [50] (p. 6). We also considered that the snowball method ensured low costs for the pilot study.

Based on our pilot research, we proposed a set of domains and indicators, different from the AAI, in order to build an original active aging index. The construction of the index was carried out using the Hellwig method—the linear ordering of objects using a pattern [51]. The basis for linear ordering is a synthetic measure whose values are estimated based on observations of diagnostic variables describing the examined objects. A synthetic measure is a latent variable because its values are not observed directly. This, however, is possible thanks to the observation of diagnostic variables that are directly measurable [52]. In the linear ordering procedure, the following steps are distinguished: determination of the nature of variables (stimulants, nominants, destimulants), determination of variable weights and their normalization, determination of reference coordinates in the case of reference aggregation, and classification of ranked objects [52–54]. The Hellwig method made it possible to construct a new aggregate indicator. This stage of the study ensured the achievement of the second research objective.

In the last stage of the study, the AAI index and the original one were used to examine whether seniors' activity, regardless of the type of its quantification, translates into their satisfaction with life. The study of the links between the value of the indices and the declared satisfaction with life was possible thanks to the method of classification of results. The results classification method allowed the grouping of the results achieved for the survey objects. Thus, descriptive statistics were calculated for the aggregate index determined during the study. Then, based on the Nowak [55] approach, the data have been classified into four groups based on the mean and standard deviation (st. dev):

1st, most important: higher or equal than mean + st.dev;

2nd, very important: (mean; mean + st.dev);

3rd, important: (mean – st.dev; mean);

4th, least important: lower than mean – st.dev.

The first group includes countries with the highest values of the aggregate index and the fourth group includes countries with the lowest values of the aggregate index. In our case, the first group will include countries where seniors are the most active, and the fourth group will consist of those whose seniors have the lowest level of activity.

Comparing the results of the two classifications (based on index and level of life satisfaction) made it possible to detect the relationship between the activity of seniors and their satisfaction with life. At this stage of the study, we achieved the third research goal.

4. Results

4.1. Adjusting the Weights of the AAI Index to the Specifics of the Life Situation of Polish Seniors

The image of Polish seniors and their living conditions shows that, in some aspects, they differ from their peers from other European Union countries [47,56–58]. These differences were taken into account by proposing different weight distributions when calculating the Active Aging Index value.

4.1.1. Employment

In the domain relating to employment, more emphasis was placed on the employment of people aged 60–64 and 65–69, giving them higher weights than they were originally given. The reason for this is that, in Poland, people from the given age ranges more often report their willingness to work and the percentage of their employment, compared to other EU countries and in the light of Poland's commitments, is not high enough (33.7 and 10.5, respectively). In addition, the results of our pilot study indicate that some seniors appreciate the possibility of exclusive time management, and associate the fact of being a senior with a lack of professional activity (so-called “reaping the benefits”).

4.1.2. Participation and Society

In Poland, seniors play an important role in caring for their grandchildren. This is due to many factors, including the insufficient number of places in kindergartens and daycare centers and the relatively high fee prices. In addition, Polish grandparents willingly take care of their grandchildren and this is often their main activity, which is why we increased the weight of this indicator. The reduced *voluntary activities indicator* weight results from the very low popularity of this form of activity in Poland in general, not only in relation to seniors. This is probably due to historical conditions. The current seniors lived their youth in an oppressive state, not in a civil one. The lack of certain, well-established traditions also affects the current generations, although the situation is slowly improving.

4.1.3. Independent, Healthy, and Secure Living

Changes in the weights of the indicators in domain 3 (No unmet needs of health and dental care, Relative median income, and No poverty risk) result from the fact that the financial situation of Polish seniors is generally worse than the EU average (the mean equivalized net income of people aged 65+ in the European Union in the 2020 year was 18.843 PPS (purchasing power standard) while, in Poland, it was 12.889), and the level of health care is assessed by them rather negatively. Hence the need to emphasize more strongly the importance of these areas of life. The weight of the Independent living arrangements indicator was reduced because, in Poland, younger generations live together with older family members more often than in other European Union countries. The main reason seems to be the financial issue, with the traditional pattern of a multi-generational family also playing an important role. However, it should be emphasized that, currently, the majority of young people decide to live separately from their parents or grandparents, thus the value of this indicator, in the near future, will probably reach the level proposed in the AAI.

4.1.4. Capacity and Enabling Environment for Active Aging

Polish seniors, despite their more difficult financial situation, assess their well-being factors to have a positive impact on their overall satisfaction with life which, in the case of Polish seniors, is assessed very similarly to seniors from other EU countries. In light of this information, we decided that social contacts and mental well-being should be given slightly higher weights. Our modifications can be seen in the Table 1.

Table 1. Modification of weights in the Polish case.

	AAI Weights	Matched Weights
1. Employment	35.00	35.00
1.1 Employment rate 55–59	25.00	35.00
1.2 Employment rate 60–64	25.00	30.00
1.3 Employment rate 65–69	25.00	20.00
1.4 Employment rate 70–74	25.00	15.00

Table 1. Cont.

	AAI Weights	Matched Weights
2. Participation in society	35.00	35.00
2.1 Voluntary activities	25.00	15.00
2.2 Care to children, grandchildren	25.00	35.00
2.3 Care to older adults	30.00	30.00
2.4 Political participation	20.00	20.00
3. Independent, healthy and secure living	10.00	10.00
3.1 Physical exercise	10.00	10.00
3.2 No unmet needs of health and dental care	20.00	25.00
3.3 Independent living arrangements	20.00	10.00
3.4 Relative median income	10.00	15.00
3.5 No poverty risk	10.00	10.00
3.6 No severe material deprivation	10.00	10.00
3.7 Physical safety	10.00	10.00
3.8 Lifelong learning	10.00	10.00
4. Capacity and enabling environment for active aging	20.00	20.00
4.1 RLE achievement of 50 years at age 55	33.33	32.33
4.2 Share of healthy life years in the RLE at age 55	23.33	23.33
4.3 Mental well-being	16.67	17.00
4.4 Use of ICT	6.67	6.67
4.5 Social connectedness	13.33	14.00
4.6 Educational attainment	6.67	6.67

Source: own study.

The results of the Active Aging Index calculations, taking into account the proposed weights, are presented in Table 2.

Analyzing the results presented in Table 2, it can be noticed that the values of individual indicators changed after assigning them new, specific-for-Poland weights. The ‘New’ columns contain new values calculated for Poland, and the New AAI column shows changes in the ranking of countries after taking into account the new calculations for Poland. Analyzing the obtained results, we can conclude that taking into account the specific features of the Polish senior community when assigning weights, improved Poland’s position in the overall ranking of the Active Aging Index. Since we wanted to increase the weights of the 4.3 and 4.5 indicators, this forced us to change the weight at the 4.1 indicator. Hence, Poland’s position within the fourth domain stayed at the same place. The analysis carried out only served to illustrate the differences, and the need of taking them into account, in the case of aggregated measures such as AAI. The obtained results cannot, however, constitute the basis for further conclusions. In order to obtain an objective picture of the activity of European seniors, a similar procedure should be carried out for each country and, only then, the new domain values should be recalculated and the ranking determined.

4.2. Proposal of an Original Active Aging Index

Section 3 describes our pilot study on the life situation of Polish seniors. The structure of the respondents is presented in Table 3.

The concept of “life situation” is very broad. In our study, we asked seniors about many aspects of their lives. In this analysis, we used only those that directly related to the issue of activity. In the course of the research, areas that are important from the point of view of seniors for their active life emerged. They formed the basis for the construction of the original active aging indicator. Its domains are finances, health, relations with the environment, and satisfaction with various spheres of life, and they were determined on the basis of the results of the pilot study. In turn, the indicators for individual domains (as indicated in Section 3) were selected on the basis of data from the Eurostat database.

Table 2. Results of domain and indices based on new weights for Poland.

Employment			New Employment		Participation		New Participation		Independent Living		New Independent Living		Capacity		New Capacity		Total AAI		New AAI	
Country	Value	Rank	Value	Rank	Value	Rank	Value	Rank	Value	Rank	Value	Rank	Value	Rank	Value	Rank	Value	Rank	Value	Rank
Belgium	26.55	24	26.55	24	27.00	1	27.00	1	74.22	11	74.22	10	64.10	8	64.10	7	47.97	8	38.98	8
Bulgaria	34.68	13	34.68	14	9.65	28	9.65	27	65.27	23	65.27	22	55.55	16	55.55	15	41.29	22	33.15	22
Czech Rep.	38.25	8	38.25	8	16.16	16	16.16	15	71.67	13	71.67	12	57.79	14	57.79	13	45.96	10	37.77	10
Denmark	41.43	4	41.43	4	21.71	7	21.71	7	78.58	1	78.58	1	66.56	2	66.56	2	52.07	2	43.27	3
Germany	41.45	3	41.45	3	15.90	18	15.90	17	75.36	9	75.36	9	64.64	4	64.64	4	49.34	6	40.54	5
Estonia	46.78	2	46.78	2	14.34	21	14.34	21	65.86	21	65.86	20	52.28	21	52.28	20	44.81	14	38.43	9
Ireland	37.95	10	37.95	10	18.83	11	18.83	10	76.20	7	76.20	7	65.02	3	65.02	3	49.50	5	40.50	6
Greece	23.70	25	23.70	25	11.84	25	11.84	24	57.89	27	57.89	26	50.82	27	50.82	26	36.06	27	28.39	27
Spain	27.53	22	27.53	22	16.17	15	16.17	14	70.83	15	70.83	14	62.29	10	62.29	9	44.20	15	34.83	19
France	28.20	21	28.20	21	26.25	3	26.25	3	75.96	8	75.96	8	63.47	9	63.47	8	48.47	7	39.35	7
Croatia	23.40	26	23.40	26	15.84	19	15.84	18	65.42	22	65.42	21	51.12	26	51.12	25	38.94	25	30.50	26
Italy	30.55	16	30.55	17	17.35	14	17.35	13	68.78	18	68.78	17	56.55	15	56.55	14	43.31	16	34.95	18
Cyprus	35.95	12	35.95	13	19.43	10	19.43	9	72.21	12	72.21	11	52.64	20	52.64	18	45.05	13	37.13	11
Latvia	41.15	6	41.15	6	17.81	13	17.81	12	56.43	28	56.43	27	51.84	25	51.84	24	41.81	19	36.65	13
Lithuania	41.23	5	41.23	5	11.06	27	11.06	26	63.52	25	63.52	25	51.92	23	51.92	22	41.93	18	35.04	17
Luxembourg	20.68	27	20.68	27	23.80	5	23.80	5	76.25	6	76.25	6	62.19	11	62.19	10	45.73	11	35.63	15
Hungary	30.73	15	30.73	16	11.60	26	11.60	25	66.80	20	66.80	19	51.87	24	51.87	23	40.25	23	31.87	24
Malta	28.30	20	28.30	20	20.87	8	20.87	8	70.43	16	70.43	15	60.77	13	60.77	12	45.10	12	36.41	14
Netherlands	39.65	7	39.65	7	26.57	2	26.57	2	76.57	5	76.57	5	64.23	7	64.23	6	51.75	3	43.68	2
Austria	29.65	18	29.65	19	18.76	12	18.76	11	77.09	4	77.09	4	61.13	12	61.13	11	46.66	9	36.88	12
Poland	28.73	19	36.00	12	13.08	23	15.00	20	62.60	26	64.00	23	52.74	19	52.60	19	39.66	24	34.77	20
Portugal	37.30	11	37.30	11	11.92	24	11.92	23	69.18	17	69.18	16	54.58	18	54.58	17	41.60	21	35.06	16
Romania	31.23	14	31.23	15	13.64	22	13.64	22	63.60	24	63.60	24	45.91	28	45.91	27	38.59	26	31.24	25
Slovenia	26.68	23	26.68	23	15.69	20	15.69	19	71.40	14	71.40	13	55.12	17	55.12	16	42.22	17	32.99	23
Slovakia	30.13	17	30.13	18	16.06	17	16.06	16	68.73	19	68.73	18	52.16	22	52.16	21	41.77	20	33.47	21
Finland	38.05	9	38.05	9	22.64	6	22.64	6	77.90	3	77.90	3	64.44	5	64.44	5	50.76	4	41.92	4
Sweden	47.33	1	47.33	1	26.02	4	26.02	4	78.30	2	78.30	2	71.56	1	71.56	1	55.80	1	47.81	1

Source: own study.

Table 3. Respondents' profile.

Demographic Characteristics	Frequency	Per Cent of Total
Gender		
Female	43	75
Male	14	25
Age (years)		
65–69	25	44
70–74	15	26
75 and above	17	30
Marital status		
Single	28	51
No single	29	49
Level of education		
Higher education	24	42
Other	33	58
Place of residence		
Small town	26	46
Medium town	20	35
Big city	11	19

Source: own study.

We proposed the following domains (based on the pilot study) and indicators (based on the Eurostat database):

1. Finances—our respondents indicated their difficult financial situation as one of the reasons for not taking up certain activities:
 - 1.1. the burden of housing expenses;
 - 1.2. the inability to participate in cultural events for financial reasons;
 - 1.3. the inability to pay for an internet service contract;
 - 1.4. the inability to cover unexpected expenses;
 - 1.5. the difficulty in making ends meet;
 - 1.6. the risk of poverty.
2. Health—a low assessment of one's health is one of the reasons for not taking action:
 - 2.1. declared physical activity;
 - 2.2. a good assessment of one's health;
 - 2.3. expected number of healthy years after age 65;
 - 2.4. difficulty in performing daily activities due to poor health.
3. Relations with the environment—the more frequent the contact with the environment, the greater the tendency to be active [59]:
 - 3.1. having the support of others in difficult moments;
 - 3.2. the possibility to talk to someone about topics that are of one's interest;
 - 3.3. computer usage;
 - 3.4. meetings with friends;
 - 3.5. participation in training.
4. Satisfaction—a good assessment of individual areas of life results in a greater willingness to fulfill oneself in other areas:
 - 4.1. satisfaction with existing relationships;
 - 4.2. satisfaction with the way one spends time;
 - 4.3. feeling happy most of the time.

The usage of the Hellwig method allowed the construction of synthetic measures for each domain for each country. Their sums constituted the final value of the author's active aging index. On this basis, it was possible to determine the ranking of European countries, which is shown in Table 4. Although the results of the pilot study indicate that, out of

the four, two domains (finance and health) play a particularly important role [26–28], no weights were used at this stage of the research.

Table 4. Ranking of EU countries based on the values of the author’s active aging index.

	Relationships	Finances	Health	Satisfaction	Total	Author’s Index
Belgium	0.45	0.77	0.77	0.69	2.68	8
Bulgaria	0.39	0.34	0.81	0.04	1.58	26
Czechia	0.48	0.80	0.78	0.66	2.71	7
Denmark	0.54	0.71	0.78	0.82	2.85	6
Germany	0.50	0.68	0.74	0.74	2.65	9
Estonia	0.45	0.60	0.65	0.56	2.26	17
Ireland	0.53	0.77	0.67	0.92	2.89	4
Greece	0.44	0.28	0.65	0.17	1.54	27
Spain	0.46	0.65	0.81	0.59	2.51	14
France	0.25	0.71	0.80	0.65	2.41	16
Croatia	0.40	0.58	0.71	0.37	2.06	19
Italy	0.21	0.67	0.62	0.38	1.89	24
Cyprus	0.44	0.76	0.01	0.70	1.91	22
Latvia	0.43	0.52	0.72	0.33	2.00	21
Lithuania	0.42	0.46	0.67	0.36	1.91	23
Luxembourg	0.39	0.91	0.85	0.73	2.88	5
Hungary	0.45	0.66	0.75	0.40	2.26	18
Malta	0.43	0.77	0.64	0.76	2.61	10
Netherlands	0.31	0.66	0.73	0.73	2.44	15
Austria	0.48	0.84	0.78	0.86	2.96	3
Poland	0.54	0.68	0.74	0.62	2.59	11
Portugal	0.35	0.61	0.55	0.49	2.00	20
Romania	0.39	0.28	0.77	0.33	1.78	25
Slovenia	0.52	0.65	0.70	0.67	2.54	12
Slovakia	0.51	0.65	0.75	0.61	2.52	13
Finland	0.56	0.86	0.88	0.91	3.21	1
Sweden	0.57	0.79	0.91	0.84	3.11	2

Source: own study.

Numerous studies, referred to in the first part of this article, indicate the important role of activity in the life of every human being, especially in the aging period. The authors also describe the impact of education on the better preservation of cognitive abilities at a later age [60], which may translate into stimulating the activity of seniors. Through the next stage of the study, we join the discussion on the impact of the activity on the general well-being of seniors measured as overall life satisfaction.

4.3. Investigating the Links between the Value of the Indices and the Declared Satisfaction with Life

In order to determine whether the activities undertaken by seniors translate into overall life satisfaction, the results classification method was used. The overall life satisfaction values are the responses of seniors in each country, given on a scale of 0 to 10 (Eurostat database). Based on the classification procedure described in Section 3, countries were assigned to four groups. In the first group, there are countries with the highest activity of their seniors, in the second—countries with very active seniors, in the third—countries where seniors are not very active and, in the fourth—the ones where the activity of seniors was at the lowest level. We assumed that, if the classification of countries based on the results of the AAI, the AAI with modified weights (New AAI), and the original one (Author’s) is similar to the classification based on the overall life satisfaction value, it will be possible to confirm the hypothesis about the impact of the activity on the overall sense of life satisfaction. The results of the conducted classifications are presented in Table 5.

Table 5. Countries' classification based on AAI, New AAI, Author's Proposal, and Overall Life Satisfaction.

	AAI	New AAI	Author's	Overall
Belgium	2	2	2	2
Bulgaria	3	3	4	4
Czech Republic	2	2	2	3
Denmark	1	1	2	1
Germany	2	2	2	2
Estonia	3	2	3	3
Ireland	2	2	1	2
Greece	4	4	4	3
Spain	3	3	2	3
France	2	2	2	3
Croatia	4	4	3	4
Italy	3	3	4	2
Cyprus	2	2	4	3
Latvia	3	3	3	3
Lithuania	3	3	4	3
Luxembourg	2	3	1	2
Hungary	3	4	3	4
Malta	2	3	2	3
Netherlands	1	1	2	1
Austria	2	2	1	1
Poland	4	3	2	2
Portugal	3	3	3	3
Romania	4	4	4	2
Slovenia	3	3	2	4
Slovakia	3	3	2	3
Finland	1	1	1	1
Sweden	1	1	1	2

Source: own study.

The results of the classifications made on the basis of the value of each indicator and overall life satisfaction were compared using the Rand measure [61] (clusterSim package of the R program). The Rand measure has a value between 0 and 1, with 0 indicating that the two data clusterings do not agree on any pair of points and 1 indicating that the data clusterings are exactly the same. In the case of comparing the classification based on the AAI values and overall life satisfaction, we obtained the highest value of the Rand index: 0.66. In other cases, this value was 0.64 for the new AAI and overall, and 0.62 for our index and overall. The values of Rand's measures for each comparison show a similarity in the classifications and may indicate the existence of a relationship between activity and overall life satisfaction. Nevertheless, they are too low for the existence of such a relationship to be unequivocally stated. The obtained result may also indicate that the domains and indicators used in both the AAI and our original proposal are not consistent with the factors that directly affect seniors' sense of satisfaction. Therefore, the values of Pearson's correlation coefficients, for the pairs of AAI and overall life satisfaction, and our index and overall life satisfaction, were examined. They were 0.62 and 0.71, respectively. In this situation, it should be considered that the original index of seniors' activity proposed by us uses domains and indicators much more similar to the factors causing seniors' life satisfaction than the AAI. The most likely explanation is that we have included a financial factor, whose impact on life satisfaction is described in many studies [26–28].

4.4. The Image of the Activity of Polish Seniors Compared to Their Peers from the European Union

The weight values proposed for Poland in the construction of the AAI index did not significantly change the affiliation of countries to particular groups (the similarity of both classifications exceeded 0.8). On the other hand, the author's index influenced the changes in the classification of countries (Rand's measure 0.64). The group of countries with the most active seniors includes Denmark, Finland, the Netherlands, and Sweden. In the

second group, whose seniors can be described as very active, there are countries such as Belgium, the Czech Republic, Cyprus, Germany, Ireland, France, and Austria. Not very active seniors are those who live in countries from the third group, i.e., Bulgaria, Estonia, Spain, Italy, Latvia, Lithuania, Hungary, Portugal, Slovenia, and Slovakia. Regardless of the type of quantification, the most active seniors live in Denmark, Finland, Netherlands and Sweden (first of four groups, Table 5). Taking into account the values of individual AAI domains (Table 2), the situation of Swedish seniors was the best. Among the four discussed countries of the first group, Finland and the Netherlands fared the worst in the Employment domain (9th and 7th place respectively), and Denmark in the Participation domain (7th place). Poland ended up in the fourth group according to the AAI classification, and in the third group according to the AAI classification with adjusted weights. Apart from Poland, the fourth group also included Croatia, Greece, and Romania. This is a clear signal to the authorities that the postulates contained in the Madrid International Plan Action on Aging [62] have not been sufficiently implemented, and that work on them should be accelerated. The results for Poland were the worst in the domains of Independent Living (26th place) and Participation (23rd place). Looking for the reasons for this situation, we decided that it may be largely due to certain conditions that are characteristic of Poland, hence the proposal of new weights for individual domains. Assigning weights specific to Polish society to the AAI resulted in moving our country to the third group, and the classification of the author's index assigned Poland to the second group, which significantly changes the picture of the activity of Polish seniors. This may mean that the domains created on the basis of pilot studies reflect the views of the older part of Polish society, on the issue of activity, to a greater extent. This situation indicates the need for discussion taking into account the specificity of individual countries when aggregating indicators. In the case of older Polish people, we engage with activity to a very small extent, and undertaking motivation activities becomes a challenge and a necessity. It is worth noting that regardless of the type of indicator, the first group of countries with the most active seniors always included Finland and Sweden. This shows that, in these countries, the level of activity of seniors is very high and activation can only serve to maintain its current level.

5. Conclusions

Our study focused on the issue of seniors' activity presented from various perspectives and contributed to the discussion, not only on its values, but also on the problems of its construction. The conclusions from the analysis of the activity of Polish seniors, compared to their peers from other EU countries, proceeded in two ways. Firstly, we concluded that there is a need to take immediate "activation" measures, because, in all domains, the results of the ranking for Poland were unsatisfactory. Secondly, the lowest values were for the Independent Living and Participation domains, which prompted us to look for reasons. Thanks to this, it was possible to propose adjusted weights and the original active aging indicator. By realizing the first goal of our research, we have shown that taking into account the characteristics specific to a given society can affect the value of the activity indicator. This specific kind of decomposition of the indicator, aggregated in nature, may provide the possibility of a better quantification of such a complex phenomenon as seniors' activity. It may also make it easier to identify problems at a country level. The results of this part of our study are consistent with the discussion undertaken by Barslund, Von Werder, and Zaidi [63], who emphasize that "One important motivation behind measuring active ageing at the individual level is that it allows for a better understanding of unequal experiences of ageing, which may otherwise be masked in aggregate-level measures of active ageing". Thanks to the conducted pilot study, we proposed an original active aging indicator in which we used domains tailored to the declared (in our pilot study) needs of seniors. The second goal of our research was strongly connected with the third. The results of the classification, created on the basis of the author's version of the indicator and overall life satisfaction, confirm the conclusions of Lakomý [64] who emphasized the importance of the economic and health factors in the activity of seniors. The third goal of our analysis was

to check whether the level of activity of seniors translates into their overall life satisfaction. The results of our study indicate the existence of such a relationship; however, the relatively low level of the Rand index value may be a signal that there is a need to adapt the aggregate domains of activity measurement indicators to the needs, capabilities, and opinions of seniors. The research which indicates that seniors' life satisfaction may be influenced by unquantifiable factors (e.g., psychological) is also worth mentioning. The paradox is that, although aging is associated with multiple physical and social losses, subjective well-being is stable or increases in later life [65]. Some authors report that creativity also impacts well-being, but this is an issue that the authors still need to explore [43].

6. Limitations and Future Suggestions

Our study significantly enriches the existing knowledge about active aging and the means of its measurement. Its greatest limitation was the lack of information allowing it to take into account the preferences of seniors in other EU countries and the specificity of their socio-economic situation. Our pilot study contributed to the identification of areas important for activity from seniors' point of view. The snowball method used gave us the opportunity to directly contact the majority of our respondents, thanks to which we believe that the answers we obtained reflected their actual views on the activity. This gives us grounds to believe that the active aging index proposed by us largely corresponds to the real situation of seniors. The high level of correlation of the domains proposed by us with the level of overall life satisfaction proves that each proposal of an indicator should take into account, not only the postulates of the European Union, but, above all, the actual possibilities and needs of seniors. This generates the need not only to repeat and extend the research but also to supplement it with information on seniors from other European Union countries, which would allow for the obtaining of more objective measures of activity. With these, it would be possible to determine the value of weights for domains in the author's index for each country separately. The modification of the weights in the existing and popularized AAI due, only, to conditions specific to Poland also requires in-depth research and discussion with experts from other EU countries. All these inconveniences could be supplemented by a survey extended to a larger number of respondents and to all European Union countries. The need to conduct and repeat the research also results from the fact that the population of seniors is changing a lot. Those people who will shortly reach senior age will have a better income and a better ability to use ICT. It can be assumed that they will be more active, willing to travel, and more demanding regarding the quality of products and services. Against this background, there is a demand for the extensive cooperation of scientists from every EU country in engaging in systematic, in-depth, and unified research regarding the situation of seniors.

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