



Attitudes of Polish entrepreneurs towards knowledge workers aged 65 plus in the context of their good employment practices



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ABSTRACT

The subject of the article is the issue of attitudes of Polish entrepreneurs towards knowledge workers aged 65 and older, in the context of their perception of benefits and threats, and the use of good practices in the area of employment. The article was written as part of the diversity management paradigm, and consists of a theoretical part presenting the literature on the subject and empirical one: analyzing the results of longitudinal studies. The research was conducted among 93 entrepreneurs, owners of small and medium enterprises, in the construction and industrial sectors, in two periods of time, in 2014 and 2019. The aim of the article is to get the answer for the following question: "What is the relationship between attitudes, perceptions by entrepreneurs of the benefits of employing workers aged 65 and older, and offering them specific good practices (flexible working hours, preparing employees for work, conducting trainings, coaching/mentoring, lack of such practices) and their hierarchy in relation to the frequency of use in 2014–2019?" The research was carried out using a specially developed questionnaire whose reliability met the requirements of methodological correctness. The results of the research showed the relationships between the attitudes of entrepreneurs in 2014 and 2019, stabilization of these attitudes (in relation of positive, neutral and negative attitudes) in the examined periods, and their perception of benefits and threats arising from the employment of knowledge workers aged 65 and older, both in 2014 and 2019; attitudes and the number of good practices offered to employees regarding the form of their employment. In addition, as a result of multi-criteria statistical analysis (biplots), it turned out that entrepreneurs in 2014 preferred and offered employees these practices in a different hierarchy than in 2019. According to the authors, the reason for the discrepancy was the decreasing level of unemployment causing an increase in the demand for employees in small and medium enterprises as well as increasing the awareness of entrepreneurs regarding the role of experienced knowledge workers in their company.

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1. Introduction

This article has been prepared as part of the sustainable development paradigm, focusing on diversity management, in relation to the employment of employees with relatively long professional experience of knowledge workers, who are in "late adulthood", i.e.

aged 65 plus. Knowledge workers perform knowledge-based work that can be distinguished from other forms of work, emphasizing "non-routine" problem solving that requires a combination of convergent and divergent thinking [Reinhard et al., 2011].

In Poland, as a country of Central Europe, over the last few years two legal regulations have taken place, regarding the retirement age for men and women. In the first case, such legal regulation took place in 2012 [Journal of Laws of May 13, 2012, item 637] and caused the retirement age of women from 60 years and men from 65 years to 67 years. The next regulation took place in November 2016 [Journal of Laws of November 16, 2016, item 38] and caused a return to the state from before the first regulation.

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Comparing the situation in Poland with other European countries, the retirement age in our country is lower than in most European countries (currently 60 years for women, 65 for men) which introduce legal regulations causing the retirement age to be extended and equality between the sexes. Western countries that are considered prosperous (France, Denmark, Iceland, the Netherlands, Belgium, Germany, Norway, Spain) have a pension threshold of 67 years for both sexes. Most of the remaining countries - 65 years. On the other hand, countries such as Ukraine, Russia, Moldova, Belarus and Albania maintain gender disparities. The average retirement age in Europe for women is 63 years and 9 months, and for men 64 years and 6 months.

As the cited data of society indicate, they face a new challenge. Taking into account the growing proportion of mature people compared to young people (up to 35 years of age) on the labor market: "How to create conditions for a sense of social security, opportunities for self-fulfillment and achieving their professional goals, as to 'discount' the potential and social capital they accumulated during their work"?

The introduced legal regulations inspired the authors of the article to deal with the problems of the professional situation of 65 plus employees, knowledge workers at the age of whose professional situation is decided by their superiors and their attitudes, most often entrepreneurs, owners of small and medium-sized enterprises, which account for about 88% of all enterprises in Poland. Approximately 11 million employees have been recently employed in this sector [PARP, 2019].

Thus, demographic changes and aging of the European society, two legislative changes regarding the retirement age and employment of employees, in particular 65+ knowledge workers, which took place in Poland in the last six years, prompted the authors to deal with the issues discussed in the article.

The professional situation of 65 plus knowledge employees is determined by the people who employ them, i.e. owners - entrepreneurs of small and medium-sized enterprises, their attitudes towards 65 plus people, perception of the benefits and risks of employing this group of people, and finally good practices, allowing them to differentiate their tasks as part of their professional activity, which make enterprises use their experience and intellectual capital. At the same time, in this way they can improve the quality of life of 65 plus knowledge workers and prevent them from premature exclusion from the labor market and social exclusion.

Therefore, the authors of the article consider the attitudes of entrepreneurs towards employing 65 plus knowledge workers, their perception of opportunities and threats arising from their employment in the context of their use of good practices in the area of employing this group of employees, i.e. flexible working hours as well as coaching and mentoring, conducting training and preparing new employees for work.

The research procedure used the results of research conducted as part of the National Center of Sciences Project "Competence management knowledge workers 65 and over. Good practices in area of employment". These studies were carried out in 2014 [Bartkowiak, 2016; Bartkowiak, 2017], and then the obtained data were compared with the results of studies carried out among the same research sample (entrepreneurs, company owners with higher education) in 2019.

2. Theoretical background

2.1. Sustainability – social aspects

The idea of sustainable development in theory and practice has been developing intensively since about thirty years ([e.g. Gladwin et al., 1995; Staric, Marcus, 2000; Etzion, 2007, Buffa et al., 2019].

The conducted research referred to the broadly conceived idea of sustainable development and its implementation in various spheres of human activity [e.g. Gladwin et al., 1995] from concerning for the functioning of the organization in the natural environment and preservation of resources to [e.g. Staric, Marcus, 2000; Etzion, 2007], introducing specific broadly understood sustainable business practices, including their socio-organizational aspects [Buffa et al., 2018] and the attitudes of good practices related to the social aspects of diversity management aimed at preventing discrimination in the labor market due to age, gender, sexual orientation or disability level [Birau et al., 201]). This article falls within the paradigm of sustainable development relating to diversity management.

Fighting against social exclusion and discrimination in the labor market the other level of consideration of problems to be solved and tasks arising from them. This phenomenon relates to such human characteristics as age, gender, sexual orientation, type of disability [Birau et al., 2019].

The results of research conducted by researches [Bentley et al., 2019], which concerned New Zealand employees aged 55 plus showed a great importance of their perception of organizational support as a factor determining their attitude to work. It turned out that certain HRM organizational practices were accompanied by greater involvement in the work of this group of employees and weakened the group's intentions to leave the job. The obtained results justify the legitimacy of further research relating to the use of good practices by older entrepreneurs and managers.

This result was confirmed by research conducted by Harada and colleagues [Harada et al., 2019] in Japan, which also indicated the need to introduce organizational solutions, aimed at providing organizational support to older employees, to keep them active on the labour market.

In another article, authors, from the United Kingdom [Egdell et al., 2018]) suggest a gap in systemic solutions in the labour market in the face of ongoing demographic changes. Admittedly, when conducting qualitative research, the researches pointed to an individual approach to the possibilities of older employees in specific workplaces, in the surveyed companies, while emphasizing the lack of specific organizational solutions for this group of employees.

Although the problem of the situation on the labor market of employees in late adulthood as a matter of concern for broadly understood sustainable development policy has already been the subject of the other authors consideration [Stypińska and Turek, 2017; Voss et al., 2016; Mc Cann and Giles, 2004; Rupp et al., 2006; Kadefors and Hanse, 2012].

There is an exception the research carried out in the form of interviews as part of the master's thesis by Dimitrowa [2016] in Bulgaria, among managers and experts showed that despite the existence of programs promoting practices to combat age discrimination, representatives of the management are not convinced of them and in the minds of the latter there are still barriers stereotypes in employing older people.

However, in the literature on the subject relatively little research can be found regarding the relationship of management attitudes towards 65 plus people, in the context of introducing specific good organizational practices, relating to the work situation and employing this group of people, in particular if they refer to Central European countries Eastern Europe. For this reason, this article fills an existing gap.

In the near future there will be a significant shift in the proportions between the number of people aged before the new legal regulations, considered productive (up to 60 years for women up to 65 years for men) and post-production. The period after 2020 will be characterized by a rapid aging of the population. A significant

increase will occur in the oldest age groups. The number of people aged 85 and more will increase by 2020 by 50% and reach half a million, and in 2030 to almost 800,000 (currently the number of people at this age is less than 320,000), in 2045 for the first time the number of people over 60 years of age will be greater than those under 30 years of age. There are data that the average age for the Polish population in 2050 will be 52.4 years, while in 2005 it was 36.8 years [Boni, 2008]. A similar situation is in Great Britain, Austria and the United States [GUS, 2004]. In 2015, the population of 65 plus people in the world was 617 million, which is 8.5% of the total population [WHO, 2015].

Awareness of aging populations requires action to be taken developing new forms of work organization, developing the potential of "mature employees" while caring for a high quality of their life.

Upcoming demographic changes entail the extension of human life (currently in Poland the average life expectancy is: for women 79.5, for men 77.9) and at the same time force taking actions aimed at the proper "use" the potential of a group of people reaching the "age of late adulthood" (from around 65 years of age) both from the point of view of the organization and the employees themselves, professionally engaged during this period of their lives.

Although the literature on the subject already contains reports regarding the functioning of the stereotypes of the management's assessment of older employees in terms of their "soft competences", i.e. assessment of credibility, loyalty (soft skills), hard competences (hard skills) physical endurance, motivation to learn new things and generally indicate the persistence of stereotypes of thinking about older people despite the passage of time [Van Dalen and Hankens (2019)], does not cover thoroughly and broadly the problems of the professional situation of a selected group of 65 plus employees as the issues discussed in the article.

This article is not only to verify the stability of persistence of certain (positive neutral or negative) attitudes of entrepreneurs towards 65 plus knowledge workers, but undertakes a more thorough analysis (novel insight) in relation to the existing literature, on the subject related to the trend of perceiving by entrepreneurs the benefits and risks of employing this type of employees. During the analysis, it will be verified whether specific entrepreneurial attitudes (positive, neutral and negative) and perceived benefits and threats from employing 65 plus knowledge workers are reflected in offering them good practices (flexible working hours, preparing employers for work, conducting trainings, coaching/mentoring, lack of such practices) and whether these correlations show durability in the two periods examined (2014 and 2019).

2.2. Attitudes towards knowledge workers 65 plus. Ageism

As indicated by studies of numerous authors, attitudes towards people in late adulthood are characterized by ageism. Ageism means a widespread tendency towards stereotypical, superstitious and discriminatory perception and treatment of seniors, a public health concern [WHO, 2015]. In the study to highlight an employee aged 65 plus a synonym will be used senior or mature person, mature employee, employee in late adulthood. This phenomenon, in its consequences, leads to a reduction in the engaged professional functioning of people in late adulthood [Levy et al., 2012], their feelings of stress resulting from social rejection, and a sense of loneliness [McHugh, 2003; Ozer and Terkes, 2015], and the consequently marginalization [Vitman et al., 2013; Arani et al., 2017]. Therefore, this situation results in the process of excluding people in the late adulthood from active participation in social life [Wethington et al., 2016; King et al., 2013; Cybulski et al., 2015; Farnobi et al., 2017].

Most of the studies conducted on mature employees indicate the existence of stereotypes in thinking about mature people, their

perception and assessment of their achievements, and especially attitudes toward them.

Attitudes are characterized by direction, e.g. hostility or willingness to cooperate and intensity - they can be strong or weak [Levy and Banaji, 2002].

Ageism is an attitude composed of three components: the cognitive component (e.g. people in late adulthood are a burden to society), the emotional-motivational component (e.g. "I don't enjoy talking to people 65 plus") and behavioral (e.g. "I avoid contacts with people 65 plus") [Ayalon et al., 2019; Ayalon and Tesch-Romer, 2017; Iversen et al., 2009]. This attitude can appear at any stage of life [Ozer and Terkes, 2015; Mc Conatha, 2003]. Ageism leads to discrimination, reduces the quality of life of people in late adulthood and causes the intellectual capital they accumulated throughout their lives to be lost in the workplace, [Stypińska and Turek, 2017; Voss et al., 2016; Mc Cann and Giles, 2004; Rupp et al., 2006; Korkmaz et al., 2019].

2.3. The specificity of knowledge workers functioning

A feature of the modern approach to management, and in particular knowledge management, is building a strategy based on obtaining intellectual capital, the potential of individual employees, their competences, motivation and learning ability, as well as individual creativity. Practitioners are aware of the difficulty of finding the right people with high competences, broad knowledge and experience. It is about knowledge workers with high qualifications, particularly valuable competences, specific professional preparation specific to them, knowledge of the industry and business contacts.

There is no consensus in the literature on how to define knowledge workers. The first to use this term was Peter Drucker [Drucker, 1954]. According to Drucker, a knowledge worker has the following features: has valuable knowledge for the organization and is often the only person; is a person who is able to use this knowledge for the organization; his knowledge is hidden and unconscious, sometimes the employee is unaware of its importance and importance. Other employees in the organization have limited access to it and are unable (for various reasons, e.g. financial resources, time resources; knowledge workers more often than other employees) use their intellect, although this is not the rule [Drucker, 1954]. The same author emphasized in numerous of his studies that knowledge workers create values for the future of the company.

Davenport [Davenport, 2009] emphasizes that knowledge workers have specialized professional preparation, are experts in their field, deal with the creation, distribution and implementation of the ideas they create. Creative thinking is the goal of their lives. Another author [Spira, 2008] draws attention to the fact that it is difficult to define the concept of knowledge worker. According to this author, this concept is slightly differentiating and not precisely separating this category of employees from others.

The understanding of the specificity of knowledge workers functioning presented by the authors became an important premise for designing the work of the same group of employees who have reached the age of 65 plus. Lord and Farrington [2006] point out the need to take into account the diverse motivation of knowledge workers, to work depending on their age. It results from the fact that older employees usually want to be professionally involved longer than their younger colleagues. Research conducted about a few years ago showed that the productivity of knowledge workers is largely determined by relations with immediate superiors and the way they are treated by immediate superiors and working conditions [Kelemen, 2010a; Mladkova, 2015].

According to the authors of the article, it should be noted that the constant desire to change the nature of work results more from the desire to self-improvement, acquiring new competences in

order to avoid routine, than from a compulsive desire to introduce changes in one's professional life. The authors of the study would add other factors to these factors, i. e.: A significant place of professional activity in the value system; Having a vision of your professional career regardless of age and consistently striving to achieve it; Confidence in self-agency.

When considering the functioning and importance of the work of knowledge workers in a broader, social and macroeconomic context, the authors point out the general lack of social awareness regarding the role of knowledge workers in the economic development of the region [Alle, 2002; Shawn, 2007; Barkhordari et al., 2019]. In this sense, 65 plus knowledge workers have significant capital potential intellectual and social, the restoration of which is time consuming and very expensive. Thus, the economies of Poland and other countries cannot afford to give up this potential [Marin, 2013]. This would be an unjustified waste of resources.

The departure of an experienced knowledge employee from the organization is a great loss for the organization due to the following factors:

- Costs related to the preparation of successors;
- An almost immediate decrease in the company's productivity;
- Costs and time invested in the development of a former knowledge worker [Drozd, 2010].

Research shows that the growing mobility of knowledge workers in Poland forces companies to use new personnel programs tailored to the needs, aspirations and expectations of knowledge workers, in particular taking into account their extensive professional experience.

3. Good practices in employment

Good practices used by entrepreneurs and management representatives in the area of employing 65 plus knowledge workers boil down to specific organizations undertaking actions aimed at achieving two types of objectives: enabling the full use of intellectual capital of knowledge and inherent experience in knowledge employees in order to remain competitive companies and to allow employees to pursue their careers so that they can achieve their professional and life goals as fully as possible. These practices include: flexible working hours, involvement of mature employees in preparing new employees for work and conducting training, coaching, mentoring [Gaudecker and Scholz, 2006; Borsch-Supan and Wilke, 2004].

3.1. Flexible working time

The varying start and end times of work boil down to the fact that employees start and end work at variable times. In practice, this means that employees can set their own hours of work, but a certain number of hours are required to work at a given time [Shagvaliyewa and Yazdanifard 2014; Goudswaard et al., 2013].

For knowledge workers, especially 65 plus employees, it seems to be particularly beneficial due to the nature of the work: varied pace of tasks carried out, the ability to independently regulate mental effort, individualisation of work tasks.

3.2. Participation of experienced 65 plus knowledge workers in the preparation for work of newly recruited employees and conducting trainings by them

This activity boils down to sharing both explicit and hidden knowledge [Fazlagić, 2015; Gupta and Sharma, 2004] with employees who are beginning their careers, identifying possible

problems and difficulties, and providing them with support. Sharing knowledge is also referring to your own professional experience, allowing newly recruited employees to avoid routine mistakes and save unnecessary energy expenditure.

Transfer of knowledge during training requires not only professional competence, but also personality characteristics, which are more common in experienced people who have a greater distance from young people than everyday problems [Burren and Jurian, 2013; Illyas et al., 2016]. Their conduct can also become a source of satisfaction in the professional life of knowledge workers in late adulthood, and at the same time a factor constituting a significant resource of the organization that can lead to an increase in its competitiveness.

3.3. Coaching and mentoring

One of the forms of professional activity offered is leading and participation of knowledge workers in shaping professional and developmental competences (particularly important in the case of 65 plus knowledge employees) seems to be coaching and mentoring. Both of them require the competence, experience and commitment of knowledge workers [Syrek-Kowalska, 2014; Bennewicz, 2014]. Their implementation requires a nearly therapeutic relationship between both parties. Coaching takes the form of fixed appointments and, unlike psychotherapeutic meetings, aims to motivate the person who is quivering to more effective achievement of professional goals. Depending on the coaching function, we can distinguish personal, life, business, transformational coaching, career coaching, competence development, etc. The organization then orders a coaching service that is addressed to selected employees and even to executive coaching, whose taxiing requires employees to have high professional and social competence [Scoular, 2014; Maggindon and Clutterbuck, 2005]. Career coaching is focused on the area of professional work, although at the same time it covers private life. It can be expected that, in relation to knowledge workers 65 plus, competence coaching, covering both professional and social competences, is the most appropriate and therefore popular.

Mentoring is a relatively long-term process that boils down to providing expert support, both in terms of employee functioning in a specific organization [Parsloe and Wray, 2011; Clutterbuck, 2008] and the implementation of a professional career. A mentor is a man or a woman who has extensive life and professional experience, and when the suggestions he makes refer to a specific organization, he is a person who perfectly recognizes his organizational culture, knows the mechanisms of "achieving success" in a particular company [Parsloe and Wray, 2011; Kram and Ragins, 2008]. From mentors, knowledge workers requires an open attitude, full of kindness as well as readiness to share knowledge with employees involved in the process. For knowledge workers 65 plus mentoring can be a form of recognition of their knowledge, experience and high competences on the part of employers, at the same time crowning the professional career pursued so far, and even the opportunity to pursue their life mission.

4. Methodology

Taking into account the fact that in November 2016 a new legal regulation took place regarding the possibility of retirement of women aged 60, men 65 [See Journal of Laws, November 16, 2016], compared to the period from 2013, in which this obligation covered both women and men from 67 years of age [See Journal of Laws, May 13, 2012], in the second stage of the research (2019), as well as continuing to consider and previously conducted research, the following research questions were formulated:

1. What is the relationship of positive, neutral and negative attitudes of entrepreneurs towards employing knowledge workers 65 plus in 2014 and 2019? Are there ageism attitudes among them?
2. What is the relation of attitudes and perception of benefits and threats by entrepreneurs in 2014 compared to 2019?
3. What is the relationship between indicators reflecting “the goodness of the attitude” (and the number of 65 good practices offered to employees? The points range of the attitude scale in the case of positive attitudes was 19–25 points, in the case of neutral attitudes - 12–18 points, in the case of negative attitudes 5–11 points. The indicator of “the goodness of the attitude” thus took the form of a specific value of points.
4. What is the relationship between attitudes, perceptions by entrepreneurs of the benefits of employing 65 plus knowledge workers, and offering them specific good practices (flexible working hours, preparing employees for work, conducting trainings, coaching/mentoring, lack of such practices) and their hierarchy in relation to the frequency of use in 2014–2019?
5. Did entrepreneurs with positive attitudes in 2014 change their preferences in offering employees 65 plus specific good practices, or are they as in the first stage of research?

In the research procedure, good practices offered to 65 plus knowledge workers (flexible working hours, preparing employers for work, conducting trainings, coaching/mentoring, lack of such practices) also their number and the order in which they were offered by entrepreneurs and perceptions of benefits and threats resulting from employing 65 plus knowledge workers were recognized as variable. Attitudes (positive, neutral, negative) were treated as cases.

The research hypothesis containing (framework) and its essence was formulated as follows: Multidimensional comparative analysis (WAP) methods are appropriate for assessing the relationship between variables, i.e. benefits - BF, threats - TS, flexible working time - FTW, training - TR, preparing new employees for work - PEW, coaching/mentoring - CM and no good NGP practices, and cases (three attitudes: positive - PA, neutral - NUA and negative - NGA) in terms of space-time, in relation to the employment of 65 plus knowledge workers in 2014 and 2019.

4.1. Description of the research sample

93 entrepreneurs, owners and co-owners of 64 companies with 51–94 employees participated in the studies analyzed in the article. These companies are service companies (22, including 11 in the construction industry), commercial (13), commercial and service (17), industrial (17) and industrial and commercial (5). They were carried out on the same research sample, in two stages: in 2014 and 2019. Participants of the first stage of the research were part of the research sample, comprising a group of 296 entrepreneurs and representatives of the management staff of Polish small and medium-sized enterprises. The selection for research carried out in 2014 and in 2019 was intentional. Entrepreneurs who voluntarily declared their participation in the survey participated.

In the first stage of the study (2014) 93 (from group of 296) entrepreneurs and representatives of the management participated. Selection for the first stage of research was mainly targeted. It took place in public universities with an economic and technical profile, which organized post-graduate studies in large cities in Poland, although students being entrepreneurs as well, came from various, often smaller towns. The research took place in two semesters of 2014. The average age of participants was 48.8 years (age ranges 44–55 years) and their tenure was over 23 years. They were owners or co-owners of small or medium-sized companies. A slight

majority of men (48/45) was observed among the participants. They completed a specially prepared questionnaire about acceptable reliability, usually on-line, via the project website. These participants represented the 64 small or medium enterprises listed above. This part of the research was part of a larger project and was sponsored by the Polish National Science Center.

In the second stage of the study (2019), the selection of people for the study in the same amount (93 entrepreneurs) included all available entrepreneurs who have not changed their workplace in the last five years [Bartkowiak, 2016].

As a result of the research carried out in the first stage, it was found that there is a relationship between the positive attitudes of entrepreneurs and management representatives towards the employment of 65 plus knowledge workers, and their perception of the advantages (relative to the risks) arising from employing this group of employees and their use of good practices in the area of their work [Bartkowiak, 2017].

Taking into account the possibility for business owners to make decisions on the application of good practices related to knowledge workers and the availability of respondents, 93 entrepreneurs participated in the further proceedings.

As mentioned, in the second stage implemented in 2019, the selection of people for research covered only all available entrepreneurs, as in the previous stage, after graduation (having a university degree) who did not change their workplace in the last five years.

4.2. Description of the research tool

The implementation of the study required the development of a specially tailored questionnaire, examining both attitudes towards 65 plus knowledge employees, as well as the benefits and risks of employing this group of people, as well as good practices in employing 65 plus knowledge employees among the surveyed managers and entrepreneurs. This questionnaire was composed of four parts A, B and C, D. This questionnaire was built partly based on the adaptation of the Polish version of the questionnaire to the study of attitudes towards mature (older) Kogans in the Polish version of P-LS [Zajac-Lamperska, 2008] and Questionnaire of students perception of work with the elderly [Nolan et al., 2006] as well as suggestions of entrepreneurs and representatives of the management - persons participating in pilot studies (58 people). Reliability of the research tool for individual scales measured Cronbach's alpha coefficient is not less than 0.71.

Part A contained 5 statements regarding attitudes towards employees 65 plus using a five-point Likert scale: I agree, I partially agree, I have no opinion, I do not agree, I completely disagree. Each statement was assigned from 1 to 5 points. The highest value of the benefits and risks scale was 25 points - the lowest 5 points. Part B, based on literature analysis [Whitney, 2007; Staudinger and Bowen, 2011], contained questions relating to the perception of the benefits and risks of employing knowledge workers, a total of 10 statements were made (5 relating to benefits and 5 to risks). Part C of the questionnaire contains suggestions for good practices in the area of employment, referring to the literature on the subject [Dul et al., 2011; Egan, 2005] and suggestions of persons participating in pilot studies. It includes selected good practices in the area of employing 65 plus knowledge workers. This part also included 5 statements. Part D contained bibliographic data of the subjects. In the construction of the questionnaire, the results of the pilot study were used, submitting to the subjects an expanded list of statements that the subjects then considered reasonable. The decision to qualify the claim for the questionnaire was made when more than 50% of the study participants agreed. The questionnaire in its entirety contained 20 statements, which in effect were assigned from 1 to 5 points.

5. Findings

5.1. Attitudes of entrepreneurs towards knowledge workers 65 plus

Comparing the attitudes of entrepreneurs towards 65 plus knowledge workers in the two periods studied, only a slight increase in the number of positive attitudes (the difference does not meet the criterion of statistical significance) can be observed in 2019 compared to research five years ago. The relationship was tested using the Student's "t" test (for two dependent samples) in accordance with the one used formula is $t = 1.397$ and is not statistically significant.

Interpretation of data therefore indicates the stability of the attitudes of entrepreneurs participating in the study towards 65 plus knowledge workers, despite the modification of legislative regulation, which may result from the fact that shaping attitudes is a process that, according to social psychology [Ajzen, 2005; Crano and Gardikiotis, 2015] is based on experience accumulated over many years in relationships with this group of people.

The stability presented in terms of positive attitudes is optimistic in the context of forecasting the future professional situation of 65 plus knowledge workers and may indicate a relatively high level of awareness regarding the possibility of using the intellectual capital of experienced employees. The research results indicate a lack of ageism attitudes It can also be expected that from the perspective of 65 plus employees an attitude is a premise for the safety of their longer employment, despite exceeding the age being the criterion for retirement.

5.2. Attitudes of entrepreneurs in relation to the perception of benefits and threats resulting from employing 65 plus knowledge workers

Analyzing the data obtained during the research (Figs. 1 and 2), relating to the benefits and threats arising from the employment of 65 plus knowledge workers in the two periods examined, it can be stated, as was the case with attitudes, the stability of their perception by entrepreneurs.

This stability, just like when comparing attitudes, may be the result of the process of gathering by entrepreneurs of positive experiences related to their cooperation with 65 plus knowledge employees, which contributed to the increase of their awareness regarding the legitimacy of employing 65 plus knowledge employees.

The study of the relationship between attitudes ('the goodness of attitude attitudes', numerical) and the perception by entrepreneurs of the benefits and risks of employing 65 plus knowledge workers showed a strong correlation relationship as a result of a set of variables in both 2014 and 2019. These relationships were tested using the Pearson's linear correlation coefficient "r" in accordance with the formula used in 2014 in the case of benefits $r = 0.782$, in the case of threats $-r = -0.375$; in 2019 - $r = 0.677$ and $r = -0.339$, respectively. In the case of relationships between attitudes and threats, there was an inversely proportional relationship. It should be noted that in the second stage of research these relationships were slightly weaker (although the discrepancy is not statistically significant) and may be coincidental. Notwithstanding this, it can be stated that the positive attitudes of entrepreneurs towards 65 plus knowledge workers in the two periods studied are accompanied by the perception of the prevailing benefits over threats and that this is a trend that persists despite the passage of five years.

5.3. Attitudes of entrepreneurs towards employees 65 plus and the number (diversity) of good practices offered by them

The conducted research showed that in both 2014 and 2019

there is a relationship between the number of points, obtained by the respondents in the questionnaire determining the "goodness of attitudes" (the scope of the scale of attitudes (in the case of positive attitudes was 19–25 points, in the case of neutral attitudes – 12–18 points, in the case of negative attitudes 5–11 points) and the number - the diversity of good practices used by entrepreneurs. They could choose a maximum of 4 good practices: flexible working time, preparing employees for work, conducting trainings, coaching/mentoring, or completely discontinue offering them. These relationships were tested using the Pearson's linear correlation coefficient "r" in accordance with the formula used they are respectively (in 2014 and 2019) $r = 0.736$ and $r = 0.568$ and are statistically significant. The obtained data showed that there was a greater correlation between entrepreneurs' attitudes towards employing 65 plus employees in 2014 than in 2019. This means that entrepreneurs in 2019 focus on selected, perhaps tested practices. This situation may be caused by the entrepreneurs gaining specific experience, enabling selection of previously offered practices, which more fully allow to meet the current needs of the company, and at the same time use the previously recognized intellectual capital of the analyzed group of people. For this reason, it seems interesting to examine how entrepreneurs' preferences developed in 2019 compared to the period five years ago.

5.4. Attitudes of entrepreneurs towards employees 65 plus and the number (diversity) of good practices offered by them

Getting the answer to the next research question, the question required the use of specific tools for multivariate analysis. Tools for multivariate analysis belong to multidimensional exploratory techniques. Among them are e.g.: biplots, multi-criteria analyzes, Multivariate Method of Statistical Models [Kostrzewa-Demczuk and Rogalska, 2020; Kostrzewa and Rogalska, 2019] and many other. Biplots are used to analyze the main components, allowing to determine the relationship between cases (in our interpretation: positive, neutral and negative attitudes) and features (criteria or variables). Biplot graphically maps the elements of rows and columns on one chart, which facilitates the analysis of correlation [Dachowski and Gałek, 2018; Sagan, 2004].

In our analysis, the main biplot coordinates contain almost 96% of the total variance of seven active variables. In order to present the interpretation of the results from the multivariate analysis, two graphs (Figs. 3 and 4) were made for the survey data from 2014 and (Figs. 6 and 7) from the year 2019, for features and cases.

These charts were then superimposed, allowing for deeper analysis. Common charts (Figs. 5 and 8) contain features, i.e. variables and cases showing positive, neutral and negative attitudes.

1. Cases (three attitudes: positive - PA, neutral - NUA and negative - NGA) are shown on the biplot with stars. The sections, on the other hand, illustrate variables (benefits - BF, threats flexible working time - FTW, training - TR, preparation for work of new employees - PEW, coaching/mentoring - CM and lack of good NGP practices).
2. The length of the vector indicates the strength of the variable (feature). The longer the vector, the more important the feature was in the analysis.

5.5. Research results from 2014

Fig. 5, which is the interpretation of the 2014 survey, indicates that the variables - benefits [BF] and training [TR] are strongly correlated ($\cos\alpha = 1.0$). There is also a strong correlation of benefits with flexible working hours [FTW] ($\cos\alpha = 0.85$). In addition, there

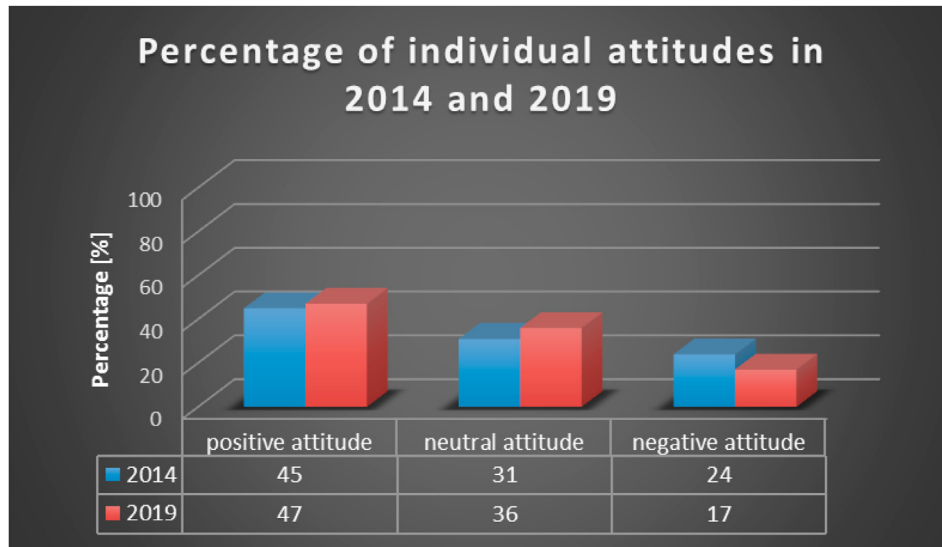


Fig. 1. Attitudes of entrepreneurs towards the employment of 65 plus knowledge workers in 2014 and 2019. Source: own research.

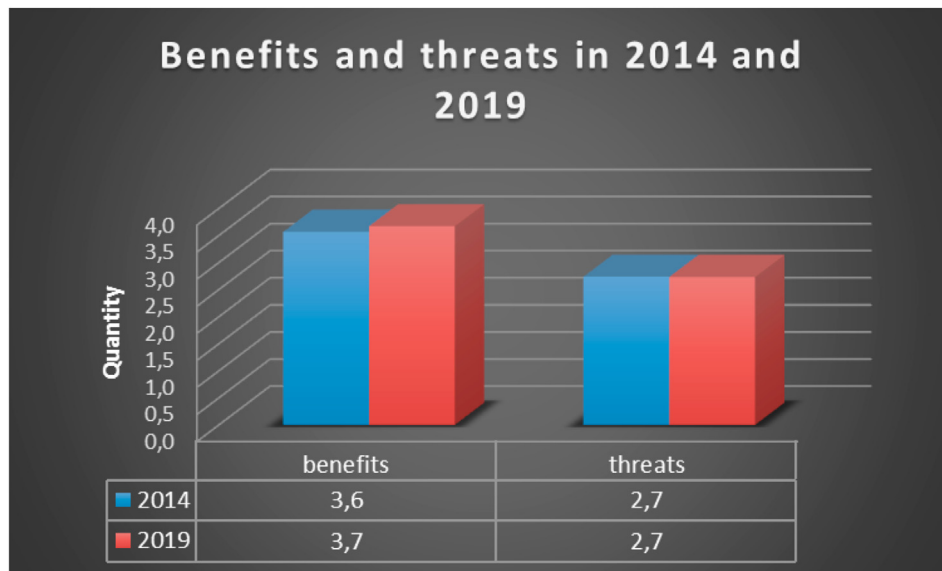


Fig. 2. Perceived benefits and threats of entrepreneurs employing 65 plus knowledge workers. Source: own research.

are also the following weaker correlations, i.e. the correlation of benefits and preparation for work of newly recruited employees [PEW] and the benefits of coaching/mentoring [CM]. All the above-mentioned variables reflect positive attitudes in the opinion of entrepreneurs.

The length of the vector represents the standard deviation (demonstrates the strength of variable discrimination), which is greatest for the benefit [BF] and preparation of new employees [PEW]. Threats and lack of good practices were also characterized by high discriminatory power, but they did not significantly affect the result of the analysis, because they explained only close to 5% of the total variance. Variables - the preparation of new employees for work and coaching/mentoring also did not significantly affect the result of the analysis, representing together with the previously mentioned nearly 5% of the total variance. However, it should be emphasized that the variables - training [TR], flexible working time [FTW] and benefits [BF] constitute over 95% of the total variance.

Variables - training and flexible working hours had the largest share in the total result of the analysis.

5.6. Research results from 2019

Fig. 8, which is the interpretation of the study for 2019, indicates that the variables - benefits [BF] and training [TR] are strongly correlated ($\cos\alpha = 0.96$). There is also a strong correlation of benefits with flexible working hours [FTW] ($\cos\alpha = 0.96$). In addition, there are also the following weaker correlations, i.e. the correlation of benefits and preparation for work of newly recruited employees [PEW] and the benefits of coaching/mentoring [CM]. All the above-mentioned variables reflect positive attitudes in the opinion of entrepreneurs.

The standard deviation is greatest for the benefits [BF], training [TR] and preparation for work of new employees [PEW]. Threats and lack of good practices were also characterized by high

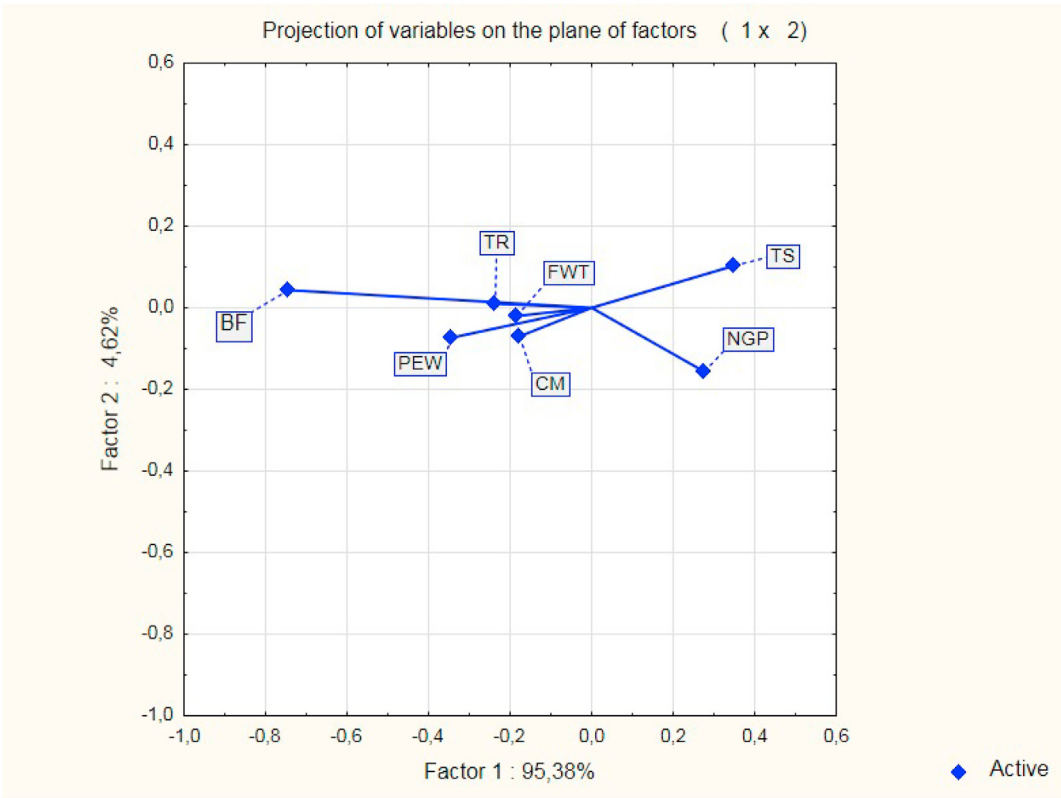


Fig. 3. Chart 2W factors for criteria (year 2014). Source: own research.

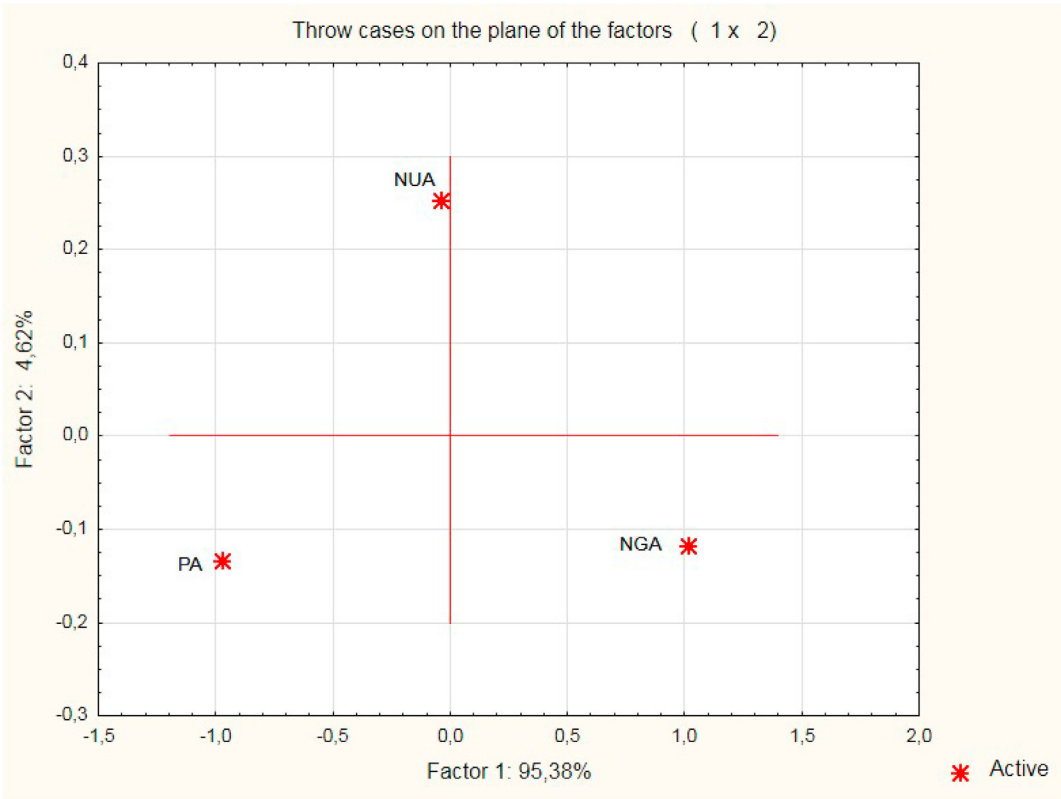


Fig. 4. Graph 2W of coordinates of attitudes (cases) (year 2014). Source: own research.

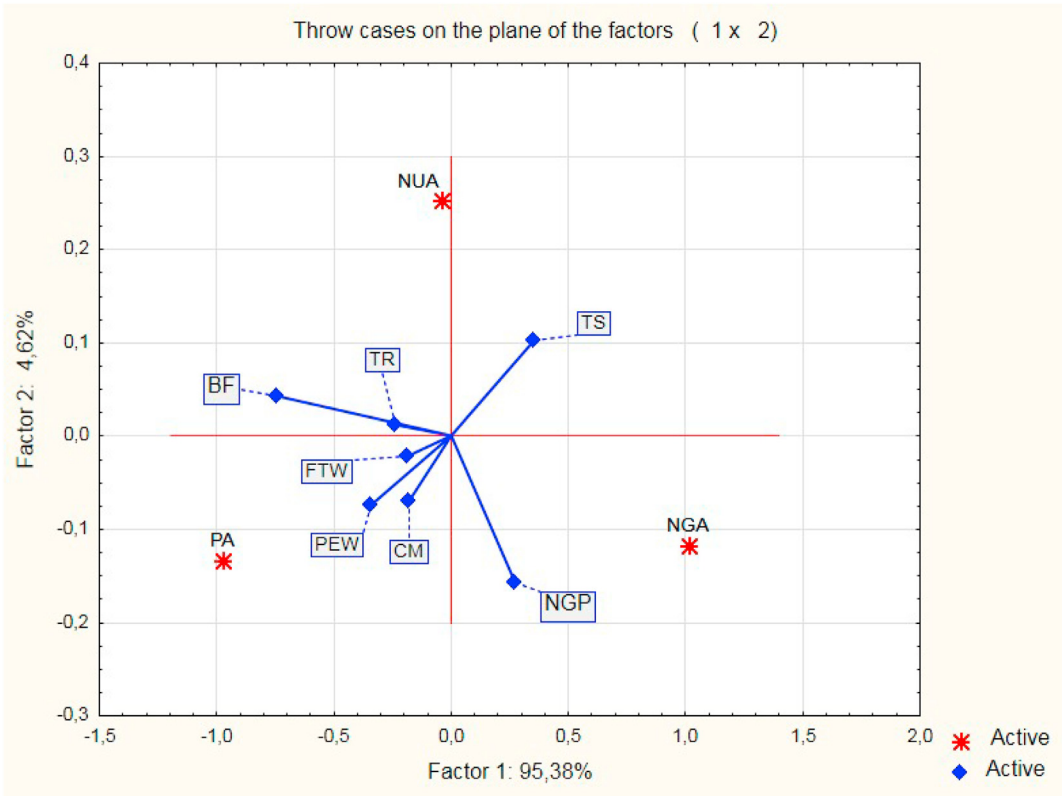


Fig. 5. Common coordinate diagram of criteria factors and attitudes (year 2014).

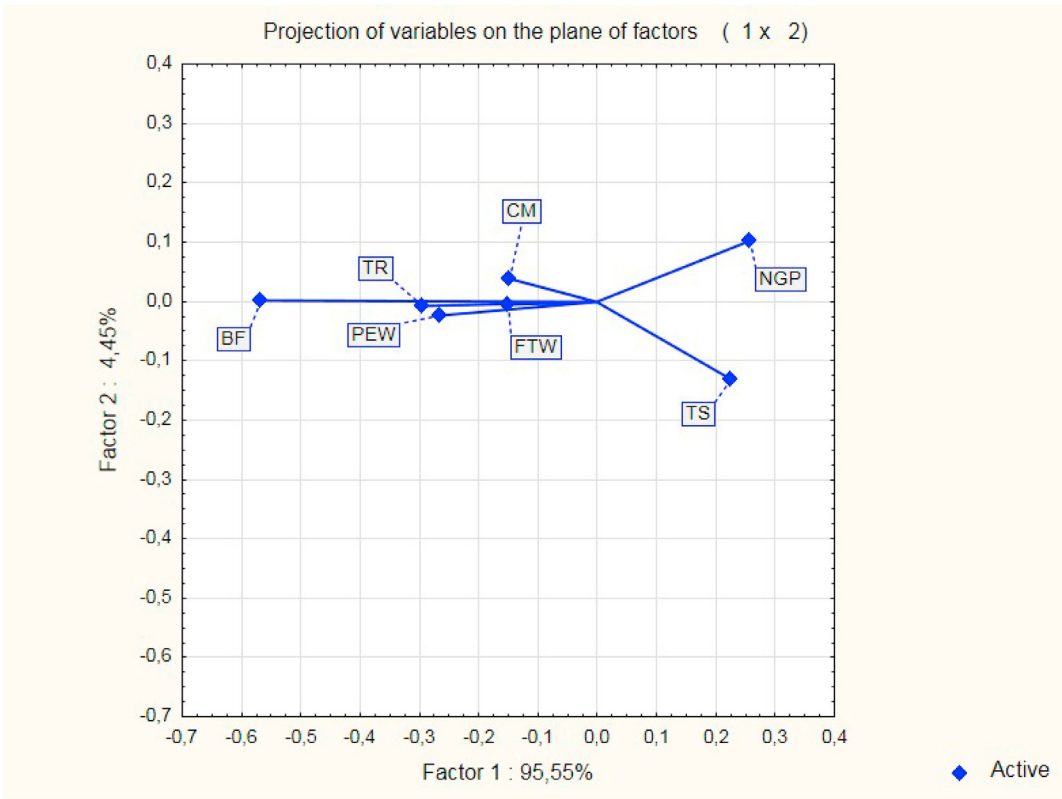


Fig. 6. Chart 2W factors for criteria (year 2019). Source: own research.

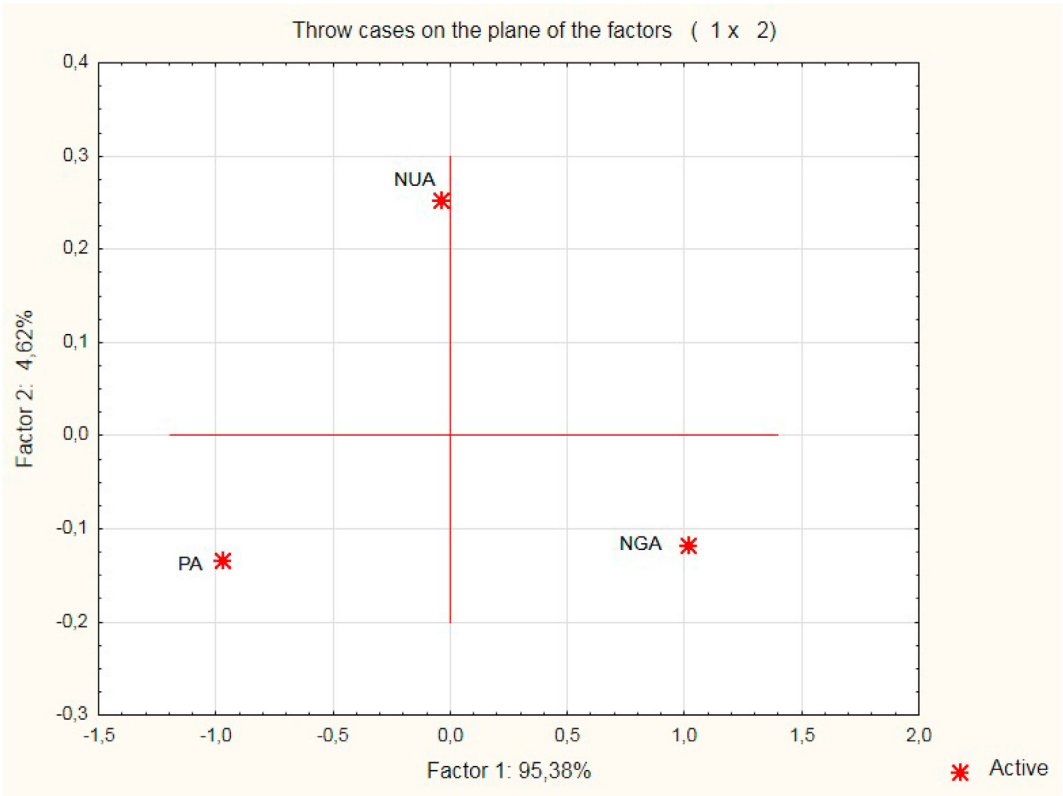


Fig. 7. Graph 2W of coordinates of attitudes (cases) (Year, 2019). Source: own research.

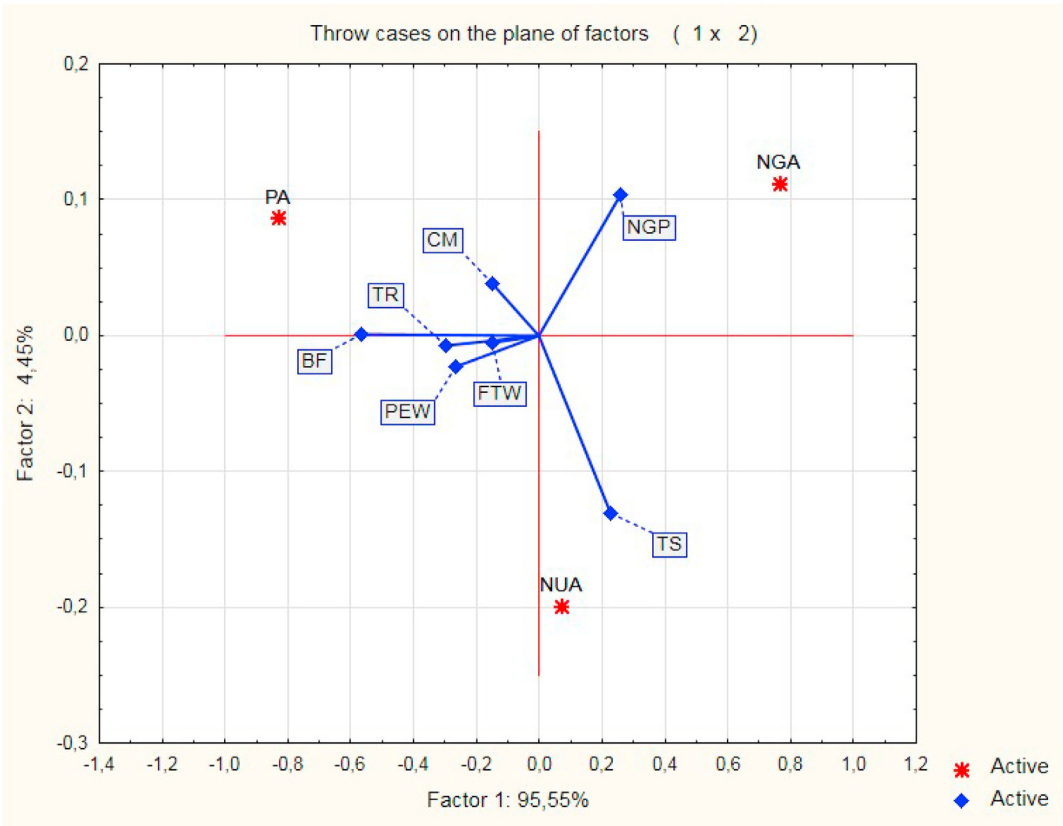


Fig. 8. Common coordinate diagram of criteria factors and attitudes (cases) (year 2019). Source: own research.

discriminatory power, but they did not significantly affect the result of the analysis, because they explained only close to 4% of the total variance. The variable - coaching/mentoring also did not significantly affect the result of the analysis, representing together with the previously mentioned nearly 4% of the total variance. It should be emphasized, however, that the variables - training [TR], flexible working time [FTW], preparation for work of new employees [PEW] and benefits [BF] constitute over 95% of the total variance. Variables - training and preparation for work of newly hired employees had the largest share in the total result of the analysis.

5.7. Summary of research from 2014 to 2019

Analyzing the charts (Figs. 5 and 8) for 2014 and 2019, the following facts can be stated:

- in the studies from 2019, the discriminatory power for training [TR] increased significantly, compared to 2014, which is satisfactory from the point of view of assessing its accounting for over 95% of the total variance of the analysis,
- in the research from 2019, the role of preparing new employees for employment [PEW] increased, raising the rank of the variable to 96% of the total variance of the analysis, while remaining at the same level of discriminatory power,
- the situation related to variables characterizing negative impacts, ie threats [TS] and lack of good practices [NGP], has not changed,
- variable discriminatory power - flexible working time [FTW] was the same during the study period.

A detailed summary of the results obtained by the biplot method is presented in Fig. 9. The analysis of the figure indicates that the majority of variables remained at a similar level during the periods studied. The significance of the PEW and TR variable increased significantly in 2019. This is due to the change in the value of the total variance of the variable from about 5% to nearly 96% (Table 1).

In order to scientifically confirm the results obtained in the biplot method, the authors conducted an analysis using the PROMETHEE II methodology, which confirmed the previously obtained results. The PROMETHEE II (Preference Ranking Organization MEHTod for Enrichment of Evaluations) method belongs to the group of multi-criteria decision support methods.

The authors conducted an analysis using evaluation criteria analogous to the biplot method. The result of the analysis carried out by the PROMETHEE II method is the ranking of decision options based on positive and negative exceedance flow values (Fig. 10). In this work, the ranking covers two years in which the survey was conducted.

A graphic interpretation of the graphic presentation of exceedance flows obtained by the PROMETHEE II method (Fig. 11) indicates that the decision options with higher negative and lower positive flows are located in the upper left corner of Fig. 10. In this work, the upper left corner has the symbol survey conducted in 2019. The 2014 survey is located on the right because it received higher positive elevation values. The analyzed test symbols are located in close proximity to each other, which indicates a slight difference in the obtained elevation values. The detailed results of the analysis are included in Table 2.

The results obtained in the PROMETHEE II method indicate a small advantage of good practices in 2014, which is in line with previous results obtained in the biplot method.

The results obtained indicate a change in the preferences of good practices offered by employers with positive attitudes and perceiving mainly the benefits of employing employees in late

adulthood, employees 65 plus in 2014 and 2019. During the study, although it was also relatively often used by entrepreneurs in 2019 [Central Statistical Office, 2019].

These discrepancies may result from the changing situation on the labor market. All of the entrepreneurs participating in the research were and are the owners of small and medium-sized enterprises, of which over 2.08 million were registered in Poland in 2017 compared to 2014, there were less than 1.9 million [PARP, 2019]. In the period under analysis, there was a decrease in unemployment by approx. 4% compared to 2014 which resulted in increased employment of new employees, so there was a need in enterprises to implement and prepare them for work. For this reason, it can be assumed that entrepreneurs decided to "use the resources of knowledge and skills" of experienced employees. They previously pointed out the benefits of such cooperation in their studies [Kelemen, 2010a,b; Mladkova, 2015], emphasizing that the commitment and productivity of employees largely depends on how they are treated by their superiors. It can be expected that the entrepreneurs participating in the research, through their positive attitudes, perceiving mainly the benefits of cooperation with 65 plus knowledge workers, offering specific good practices that modify their current form of work, confirmed the high competencies of mature employees and demonstrated concern for the development of human capital in the organization.

The research inspires to undertake further research activity. It seems interesting in subsequent analyzes to examine the level of job satisfaction and well-being of knowledge workers who, despite exceeding their retirement age, are still professionally involved.

6. Discussion and conclusions

As the data obtained show, both in the 2014 and 2019 surveys, the attitudes of entrepreneurs towards employing 65 plus knowledge workers were in most cases positive. Therefore, an ageism attitudes cannot be observed. This result confirms previous research conducted on a sample of 296 entrepreneurs and management representatives.

The results obtained by positive verification of the adopted hypothesis, confirming the stability of positive attitudes of entrepreneurs, regardless of the passage of time and legal regulations introduced, referring to the age of retirement indicate their persistent co-occurrence with the perception of the benefits and risks of employing knowledge employees and offering employees specific good practices relating to the form and type of performed work. However, the hierarchy of practices offered by entrepreneurs has changed. The change in the hierarchy of good practices indicates a reactive attitude of entrepreneurs to changes in the labor market, presumably caused by a decrease in the unemployment rate in the two examined periods.

The obtained data partly confirms the results of similar studies carried out by the Swedish researchers Kadefos and Hance [2012]. These authors, examining 147 employers of the private sector, showed mixed attitudes towards competences and motivation to learn the new things for 50 plus employees. However, these attitudes seem to be depended on the age and sex of employees to whom these attitudes relate. At the same time, it was found that younger employers presented more negative attitudes towards the possibility of acquiring competences for older employees. Although this relationship was not the primary subject of the analysis of the authors of this article, it can be expected that it did not appear as a factor diversifying attitudes because the sample was unified in terms of age.

The results obtained in the previously cited article also confirm the conclusions reached by other authors [Van Dalen and Hankens (2019)] conducting research among Dutch managers in the years

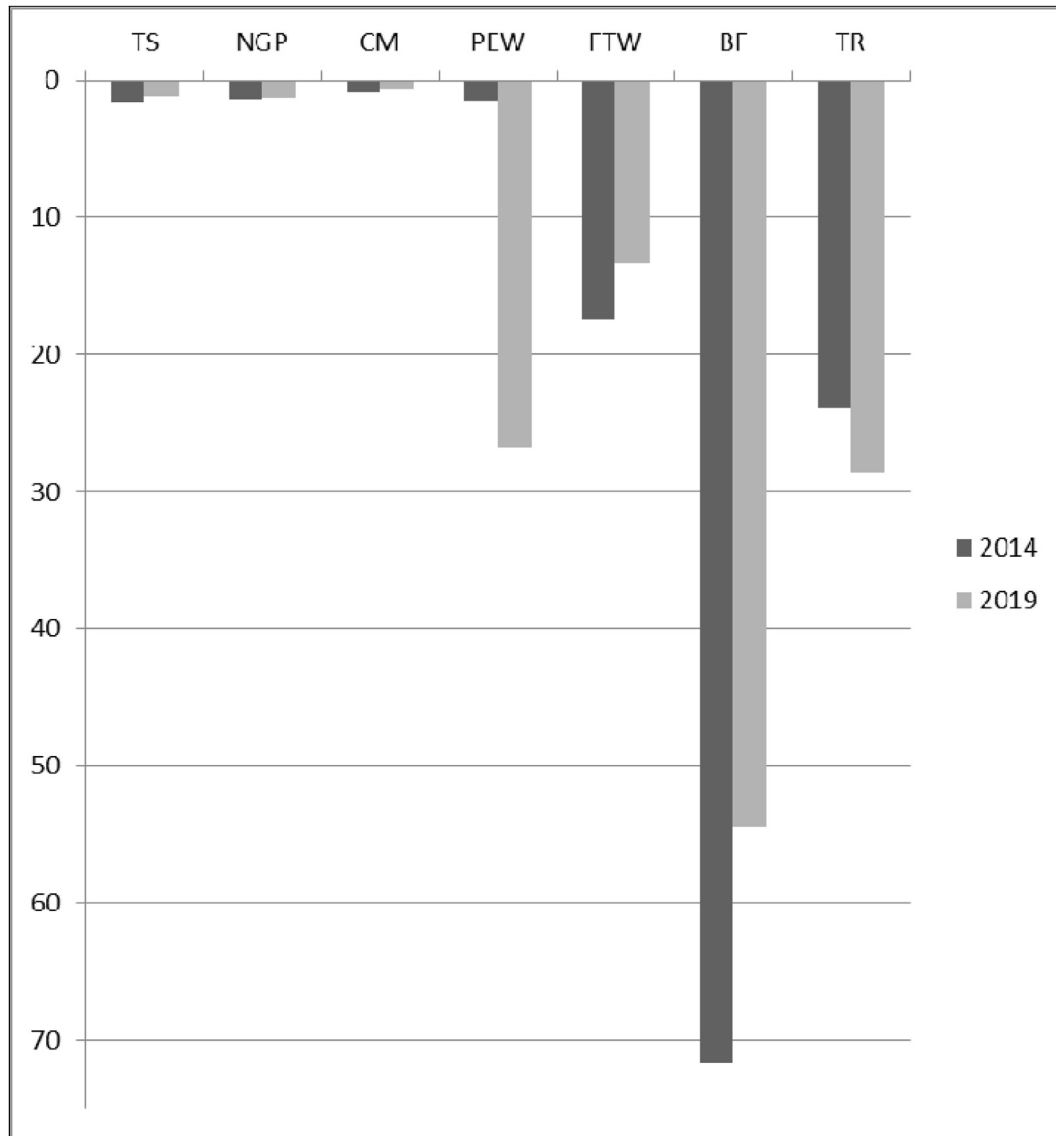


Fig. 9. Comparison of results. Source: own research.

Table 1

Results of the analysis.

	2014	95.38%	4.62%	obtained value	2019	95.55%	4.45%	obtained value
TS	0.348		X	1.608	0.263		X	1.170
NGP	0.303		X	1.400	0.282		X	1.255
CM	0.195		X	0.901	0.146		X	0.650
PEW	0.329		X	1.520	0.281	X		26.85
FTW	0.182	X		17.359	0.140	X		13.377
BF	0.752	X		71.726	0.570	X		54.463
TR	0.250	X		23.845	0.300	X		28.665

(2010–2013) in the aspect of the type of attitudes and their conditioning towards older employees. Although the research has shown a persistent stability of attitudes, their slight variation was observed among others depending on the age of managers, their education, and sex, tenure, and experience in relations with older employees.

The confrontation of the research results obtained by the other authors with their own research is developing a the next inspiration to continue further research allowing a more complete

understanding of the determinants of specific attitudes.

Somewhat controversial may be the results of research on similar issues, conducted among Danish employers regarding the existence of relationships between employers' attitudes of practices used in relation to personnel management towards employees with long work experience [Jensen et al., 2018] and as a result of which it turned out that stereotypical attitudes towards older employees do not translate into the application of specific discriminatory practices towards this group of employees. The

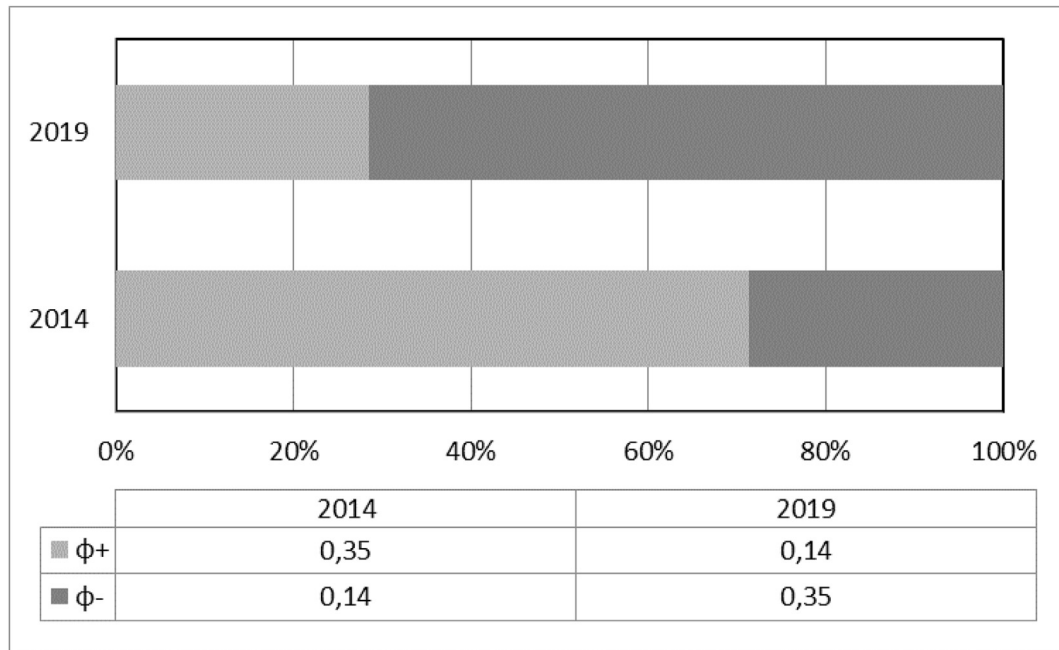


Fig. 10. Graphical representation of exceedance flows (%). Source: own research.

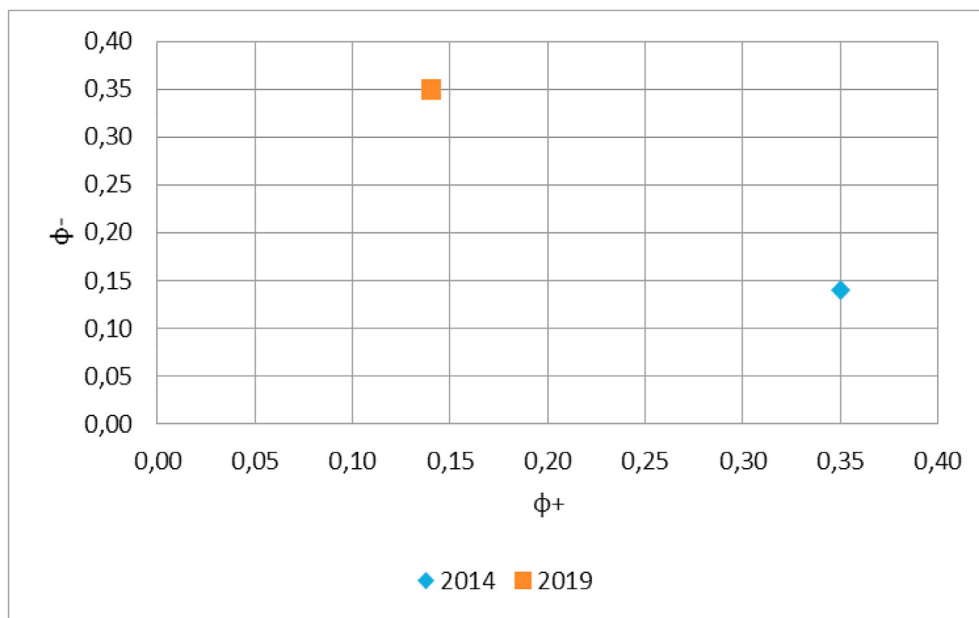


Fig. 11. Results of the PROMETHEE II methodology. Source: own research.

Table 2
Exceedance flow.

$\pi(a^i, a^j)$	$\phi+$	$\phi-$	ϕ	Ranking position
2014	0.350	0.243	0.210	I
2019	0.148	0.358	-0.210	II

authors express the view that one of the reasons may be the specificity of Denmark as a country known for its non-hierarchical, egalitarian nature of society. In addition, with respect to studies of a certain discrepancy in the results of studies received by the authors of the article, not translating stereotypical thinking about older

people does not necessarily mean concern for creating working conditions for them to ensure the use of their intellectual capital and motivating them to engage in work.

The obtained research results prove the high level of awareness and positive experience of entrepreneurs in cooperation with 65 plus knowledge workers [Bartkowiak, 2016]. Positive attitudes are associated with the perceived benefits of cooperation with 65 plus knowledge workers. Therefore, it can be assumed that they appreciate the competences of this group of employees, recognizing that 65 plus knowledge workers represent a significant potential of intellectual and social capital, the restoration of which would be time consuming and very costly. So, as Marin [2013]

suggests, one can't afford to give up this potential. This would be an unjustified waste of resources.

In this situation, it is a truism to say that knowledge is a resource characterizing 65 plus employees is of particular importance for the organization and provides broadly understood development opportunities [Fazlagić, 2015; Hvide and Kristiansen, 2012].

Continuing these considerations, the research confirmed the results of analyzes carried out by Marnewick and his team [2019] emphasizing the need to manage diversity, to motivate employees to engage in activities, implement good practices and appropriate behavior patterns. Even if it does not follow directly from the results of the research, this may indicate the role of employer's confidence in an employee with advanced seniority, who builds positive relationships and is a factor in job satisfaction. Such a solution seems to be particularly suitable for 65plus knowledge workers, it can include both flexible working time and individually negotiated content and scope of tasks performer.

The obtained research results allow for the formulation of specific conclusions and inspire to formulate further hypotheses:

- From the point of view of a knowledge worker 65 plus, positive entrepreneurial attitudes build his or her trust in the organization, increase the sense of security of employment after retirement, even if they experience any health problems, and create opportunities to negotiate the scope and content of their work. Such a situation certainly contributes to the improvement of their well-being and improves the subjectively assessed quality of life.
- From the organization's point of view, positive attitudes towards mature knowledge workers and the associated perception of the advantage of benefits over the risks arising from the employment of this group of people means that they will be willing to use their intellectual and social capital. In this way entrepreneurs optimize human capital management in the organization not allowing it to be wasted. At the same time, the observed modification of good practices used, enabling the modification of work in late adulthood, can cause that depending on the needs, they will modify, create and implement subsequent practices.
- Considering the obtained data from a broader perspective, it would be cognitively interesting to examine to what extent the continuing trend of positive attitudes towards the employment of knowledge workers 65 plus characterizes the other countries of Central and Eastern Europe or, if so, to what extent is it characteristic of Poland? The inspiration for further research carried out as part of the diversity management paradigm could be to examine whether and to what extent positive attitudes of entrepreneurs could also include employees with disabilities from countries with different cultures and different demographic characteristics.

The research carried out next to the cognitive values have the application values. Research has shown the importance of positive entrepreneurial attitudes and their perception of the benefits and risks of employing 65 plus knowledge workers to create and shape their professional situation. Although these attitudes show a certain stability, in order to maintain positive attitudes it is postulated to promote the possibilities of older knowledge workers and further use of their intellectual capital for the development of enterprises, e.g. to increase their competitiveness. At the same time, it can be expected that the positive attitudes of entrepreneurs contributing to the creation of proper working conditions and enabling the further employment of 65 plus employees contribute to the improvement of their quality of life for 65 plus employees.

In the broader social context of the conducted research, the

obtained research results can contribute to a more full application by enterprises of the intellectual potential of knowledge workers 65 plus and knowledge workers to ensure a higher quality of life.

The cognitive values of the conducted research can be considered from interdisciplinary perspectives. In the first of them, the classic views of economists and management representatives play an important role, in the second perspective a more individual-focused approach, presented by social gerontology, is significant.

Considering the cognitive values of the conducted research, from the point of view of the broadly understood socio-economic perspective, it can be concluded that the positive attitudes of entrepreneurs towards 65+ knowledge workers, which are reflected in certain good practices, confirm the assumptions of the Nobel Prize winner who created the theory of human capital by n. G. Becker [1993]. According to its assumptions, investing in human capital is one of the most important factors determining the development of a modern economy. This issue is particularly important for the ongoing globalization and increasingly clear competition in international markets. [Kelemen, 2010]. The dynamic development of areas related to information processing, computerization, new and advanced technologies undoubtedly requires the involvement of high quality human capital, which is largely a derivative of education and acquired qualifications as well as experience supported by practical skills.

Nevertheless, T.W. Schultz is considered the founder of the theory, who received the Nobel Prize in 1979 for research in economics. In his views on economic development, he emphasized the importance of human capital. Creating the theory of human capital, T.W. Schultz used in his considerations the works of the American economist of Polish origin, Jacob Mincer and the American Nobel Prize winner in 1992 in the field of economy - G.S. Becker, whose theory was based in essence on the thought of A. Smith [after Markowska, 2009]. In the classic work of T.W. Schultz - Investment in Human Capital, the author emphasizes that human capital is "embodied in educated employees of the organization" [1976, p. 48]. He claims that the benefits of investing in people through education and professional development are greater than those of investing in physical capital. In his opinion, every human being has certain innate abilities and knowledge that can be developed by maintaining good health, education, acquiring new qualifications and experience during professional work, and creating appropriate conditions (ibid). The experience of educated people is particularly important. Their well-being of economic development depends on this. For this reason, the management plays a special role, through decision-making processes it organizes the working conditions for other employees [Drucker, 2005]. Creating conditions for knowledge sharing by mature employees is equally important [Davenport, 2009].

In turn, the already mentioned G. Becker in his work entitled Human Capital [1993] best described the concept of human capital. The Nobel Prize winner introduced the concept of investing in human capital, understood as the allocation of resources that affects future real incomes. He believed that the level of capital was significantly influenced by education, acquiring qualifications and professional experience, gathering information on the operation of the economic system and the state of health, which is responsible for physical and mental disposition of man. All these types of investing in a human being increase its abilities, thus increasing its actual organizational resources. G. Becker argued that people's knowledge and technology have a growing impact on economic growth. He devoted most space in his considerations to investing in human capital through training at work [after Cichy and Malaga, 2007, pp. 18–19]. The G. Becker model therefore describes investments in human capital through training at work. For this reason, it can be expected that knowledge workers 65 plus

competent trainers contribute to the growth of human capital necessary for economic development.

As already mentioned in the initial part of the article, dynamically occurring demographic processes related to progressive aging of the society, as well as the escalating social, economic and health problems related to the growing number of older people, encourage the construction and further systematization of the theory of social gerontology both in the area of popular science and specialist [Bass, 2009; Bass, 2013; Longino and Powel, 2009].

The first trend should be directed to the general public using social prevention solutions and tools and should be strongly marked in social and environmental education [Theiss, 2006; Winiarski, 2003] (community education, local education). It is about promoting positive social attitudes towards people in late adulthood. Pointing to the possibilities of this group of people, its experience that can be shared in diverse areas of life. In this area, it is important to go beyond colloquial knowledge, neutralization of harmful prejudices and social myths related to aging and the functioning of old people. It is important to overcome stereotypes that negatively (or pseudo-positively) stigmatize old age and old people [Hendricks et al., 2010]. In this approach based on sociological paradigms (positivist, interpretative and critical) paradigms, it is particularly important to assume that the experience of aging is not universal, but rather social reality in the sense of everyday life, so there is a need to integrate the known territory of macro data with research at the micro level [Tannishta, 2017].

In the second, specialized area, it is important to introduce 'education for old age'. The goal of this education should be to bring about a situation in which the subject learning life [Demetrio, 2006] has habits that optimize the quality of later existence in the biological, psychological, social, intellectual and economic fields. He will acquire the competences necessary for intergenerational dialogue, he will live to his broadly defined development in every area of life. It seems especially important to maintain economic activity, responsible for the sense of high quality of life [Szarota, 2015].

The popularization process should use different ways to reach the widest audience, various audiences, in particular children and adolescents. Therefore, in the dissemination of knowledge it is necessary to develop all spaces. Social campaigns should be initiated, media, street advertising should be involved, etc. This message should include elementary and scientifically objective messages characterizing intellectual capabilities, competences, people aged 65 plus. It is important to recognize the cultural, social, but also economic potential of seniors, while recognizing the need to optimize their living conditions. The effect of complementary educational activities should be to prepare individuals and the general public to face the consequences of the increasing percentage of people of advanced age. It is worth reminding and believing that for centuries many philosophers have presented - incomprehensible to young people - the advantages of old age. For this reason, today's thinkers as well as economists are increasingly pointing to the cultural and economic potential of old age [Longino and Powell, 2009].

The research is not free of restrictions, of which, despite numerous difficulties experienced in conducting longitudinal studies, the most important is the small research sample that prevents excessive generalization of conclusions.

The article was written as part of the humanistic diversity management paradigm, emphasizing the significant role of human in the organization, regardless of his age, the importance of his intellectual capital for the development of the organization, and consequently concern for the high quality of his life. This paradigm forces the organization and thus its decision-makers to have a new pattern of functioning. This study is devoted to the analysis of this

pattern.

Thus, the obtained research results, promoting full participation in the lives of people aged 65 plus, in a broadly understood social and, in particular, professional aspect, promote the legitimacy of pursuing a sustainable development policy.

In addition, the added value of the research is the confirmation of the possibility of using multidimensional exploration techniques-biplots to reflect dependencies in the adopted model in social sciences.

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CRediT authorship contribution statement

Grażyna Bartkowiak: Conceptualization, Methodology, Investigation, Writing - original draft, Writing - review & editing, Supervision, Project administration, Funding acquisition. **Agnieszka Krugielka:** Conceptualization, Methodology, Investigation, Data curation, Writing - original draft, Writing - review & editing. **Ryszard Dachowski:** Methodology, Software, Validation, Formal analysis, Investigation, Writing - original draft, Writing - review & editing, Visualization. **Katarzyna Gałek:** Methodology, Software, Validation, Formal analysis, Writing - original draft, Writing - review & editing, Visualization. **Paulina Kostrzewa-Demczuk:** Validation, Writing - review & editing, Visualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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