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Generational differences in values and patterns of thinking in the workplace

The aim of this article is to empirically identify and analyse the differences between generations X, Y and Z in terms of values and patterns of thinking in the workplace. For the purposes of achieving the set objective, quantitative studies were performed. Data were obtained with the use of the MindSonar psychometric test. The results were subjected to a statistical analysis, and 435 economically active respondents took part in the study. The study shows that there are numerous statistically significant differences in preferred values and patterns of thinking among representatives of various generations (the differences occur in 2 out of the 7 measured levels of existence and their corresponding values, and in 9 out of the 32 measured patterns of thinking, or metaprograms). The obtained results may help HR managers and specialists focus on real, diagnosed differences in employees, which may be used for determining and communicating organisational priorities for current and future employees.

Keywords: generations, values, patterns of thinking, workplace, Poland

1. Introduction

The co-existence of various generations of employees in the workplace constitutes one of the present challenges of managing human resources (Singh, 2014; Culpin et al., 2015; Holian, 2015; Guerin-Marion et al., 2018). What is significant in this context

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is the complexity of the process of creating a work environment that attracts and satisfies different generations of employees (Hansen and Leuty, 2012).

The increasing interest in generational diversity in the workplace is reflected in numerous scientific studies. Some of those are based on the assumption that employees from different generations differ significantly in terms of their goals, expectations and values in relation to the workplace (Madera et al., 2011; Costanza et al., 2012; Lyons and Kuron, 2014). The said works also include studies which formulate hypotheses based on stereotypes regarding generational differences (Giancola, 2006; Posthuma and Campion, 2009; Costanza and Finkelstein, 2015; Hayes et al., 2018; van Rossem, 2019). The existing research indicates that there are certain differences between generations in terms of their attitudes to work and career; these differences, however, are usually not large (Macky et al., 2008) and sometimes they defy well--established stereotypes.

A large number of studies make the general assumption that each generation has its characteristic needs, values and attitudes which relate both to private as well as professional life (Glass, 2007; Dries et al., 2008; Lyons and Kuron, 2014). Such an approach is justified by the fact that members of a given generation experience together common events, phenomena and trends, which makes them have a similar perception of the world (Kindrick Patterson, 2007). Changes occurring in the nature of work and the fact that each generation entered the labour market at a different period may imply that there are differences in values and conduct in the workplace between representatives of various generations. Lester et al. (2012) indicated that the perception of generational differences in the workplace does exist, even if these differences are not always proven empirically. The perception of differences between given generations may pertain to different aspects of work, such as work values (Parry and Urwin, 2011), work attitudes (Costanza et al., 2012), and the matching of the values of an organisation with the values of an individual (Cennamo and Gardner, 2008). There is practically no research in which dependent variables are values and patterns of thinking preferred by members of given generations, the so-called metaprograms, which translate into specific behaviour in the workplace.

Therefore, the aim of this article was to empirically identify and analyse the differences between generations X, Y and Z in the scope of the preferred values and patterns of thinking in the workplace. This aim was achieved by conducting empirical examinations. The study utilised the CAWI method, in which the MindSonar psychometric test was used to collect data. The obtained results were subjected to a statistical analysis in order to determine differences between the studied representatives of the three generations. This article contributes to explaining intergenerational differences from the perspective of assumed values and patterns of thinking, and the results show how identified values and patterns of thinking can shape the expectations, attitudes and behaviours of employees from different generations. The study results may prove useful in taking actions aimed at limiting conflicts or misunderstandings based on generational stereotypes, and may result in

an increment of knowledge in the general discussion on generational differences in the workplace.

The first part of the article is devoted to a theoretical framework of the issue of intergenerational differences. Later, the article presents the methodology of empirical study, followed by a presentation of the results of the conducted studies, which are then interpreted and related to the research of other authors in the 'discussion' part. The final part of the article contains key conclusions from the study.

2. Literature review

In today's labour market, there are employees representing various generations. Whether a given person belongs to a given generation depends most of all on the age bracket (date of birth). The generation of Baby Boomers comprises persons born in the period 1946-1964, Generation X those born in 1965-1979, whereas the determinant of the next generation has not been precisely established yet. Some researchers and practitioners refer to the last generation as Millennials or Generation Y (1980-2000), while others distinguish Generation Y and Generation Z within this group. Generally, it is assumed that Generation Z are persons born starting from 1995 (Schawbel, 2014; Berkup, 2014).

Generation groups, or cohorts, understood as groups comprising persons based on cut-off values of their dates of birth constitute a simplified theoretical structure for generational studies (Kupperschmidt, 2000; Smola and Sutton, 2002; Foster, 2013). Most studies concerning generational differences in the workplace are carried out from the cohort perspective and assume the occurrence of psychological and behavioural differences between various generations (Lyons and Kuron, 2014).

Generational identity does not only mean a similar age of persons classified within the same generation, but is also the result of historical and social experiences of individual generation cohorts (Egri and Ralston, 2004). According to Smola and Sutton (2002), the social context in which a given cohort develops affects their values and beliefs regarding the organisation, work ethics, cause and mode of action as well as goals and aspirations for their social lives. Factors such as globalisation processes and the quick technological progress affect the changing values and expectations of individual employees in the perspective of consecutive generations. In addition, the complexity of generational problems may be better explained when taking into account variables such as the level of education, race, gender, age, and geographical location.

In spite of the growing number of studies concerning generational changes in the workplace, today scientists and practitioners dealing with management face a disorientating disorder of proof generated in various contexts using various methodological and theoretical perspectives (Lyons and Kuron, 2014). The conclusions reached on the basis of cross-cutting studies do not give grounds for their comparison, which hinders the identification of common, recurring patterns, because these studies

feature samples from different countries or trades, or they compare generations using different scopes of generational identity.

Concentrating on the values of work constitutes one of the basic scopes of studies of generational differences. The assessment of differences in work values is performed based on distinguished features of work, such as: work ethics, free time, external values (money, status), internal values (sense of meaning, talent), altruistic values (charity work, helping others), social values (need to belong). Parry and Urwin (2011) carried out a review of research in this area, and found a lack of clear results confirming the occurrence of generational differences in work values. Studies analysing the meaning of hard work for individual generations point to a decreasing trend for this value with each consecutive generation (Cogin, 2012; Gursoy et al., 2013). This trend is also reflected in the results of research demonstrating an increase of demand for more free time with each consecutive generation (Takase et al., 2009; Cogin, 2012; Twenge et al., 2010). Most studies concerning altruistic values, such as charity work and helping others, did not find any significant differences (Cennamo and Gardner, 2008; Twenge et al., 2010; Hansen and Leuty, 2012); however, the results of research conducted by Chen and Choi (2008) show that Baby Boomers value altruistic work higher than members of the younger generation. Hansen and Leuty (2012) demonstrated that younger generations put greater emphasis on social links at work. The study conducted by Twenge et al. (2010) indicated that the significance of internal values, such as remuneration or prestige, drops slightly over the course of generations. Lester et al. (2012) found that older generations value professionalism more than younger ones. This is in line with Wilsa et al. (2011), finding that, compared to younger generations, Baby Boomers give greater importance to observing rules and codes of conduct, while paying less attention to entertainment and stimulation at work.

The matching of the values of an organisation with the values of an individual is important for all generational groups (Cennamo and Gardner, 2008). The first question that emerges in this respect is: which values are preferred by various generations in the workplace and do they differ? Thus, the following research hypothesis was tested.

Hypothesis 1. *Generations X, Y, Z differ in terms of preferred values in the workplace.*

One of the main subjects of research in the area of generational differences is work attitudes, most notably organisational commitment and work satisfaction (Costanza et al., 2012). A large number of studies in this scope cover only one organisation, trade or profession, which does not allow formulating generalised conclusions regarding entire populations. The results of these studies suggest that organisational commitment differs across generations and it almost always decreases in subsequent, younger generations (Lyons and Kuron, 2014). The results of those studies, however, are not consistent as some of them indicate the occurrence of a declining level of work satisfaction in consecutive generations (Beutell and Wittig--Berman, 2008; Benson and Brown, 2011), Kowske et al. (2010) found decreasing

work satisfaction in the case of Baby Boomers and then a slightly higher level of satisfaction in younger generations, with the general satisfaction of Generation Y being above the average. Similar findings were determined in the case of work satisfaction. Some studies indicate the existence of certain significant generational differences in attitudes to work (Park and Gursoy, 2012), while others in the same scope, point to the existence of similarities (Barron et al., 2014; Cucina et al., 2018). Some studies suggest decreasing work commitment with each consecutive generation (D'Amato and Herzfeldt, 2008; Brunetto et al., 2012; Lub et al., 2012). In turn, Davis et al. (2006) found that younger generations demonstrate greater involvement in their organisation than Baby Boomers.

An analysis of the results of the existing research indicates the occurrence of specific differences in attitudes at work across generations. There have been, however, no results relating to patterns of thinking which would determine the existence of certain attitudes, and, consequently, specific behaviour in the workplace resulting from them. In order to explore generational differences in patterns of thinking in the workplace, the following research hypothesis was tested.

Hypothesis 2. *Generations X, Y, Z differ in terms of preferred patterns of thinking in the workplace.*

3. Research methodology

In order to test the research hypothesis, quantitative studies were carried out using the CAWI method. The selection of the sample was intentional and voluntary. The research sample consisted in graduates of universities where the authors of this article carry out their research. Invitations to take part in the study were sent by e-mail with the use of the universities' databases on graduates. The study was conducted on participants who had responded to a study announcement and filled in a psychometric on-line test. In order to enter the study, respondents had to meet the following conditions: being employed for at least 3 months, having higher education and being part of generation X or Y or Z.

The study assumed that generation X includes persons born in the years 1965-1979; generation Y are persons born in 1980-1994; and generation Z are those born after 1995. The study covered 435 respondents from Poland, of which 26 persons represented generation X, 252 generation Y, and 157 generation Z. The average age of the respondents was: for generation X: 42.3, generation Y: 27.0, and generation Z: 22.8. The study did not include the generation of Baby Boomers (BB) born in the period 1946-1964 because this generation is slowly ending their professional activity, whereas the respondents identified with generation X were treated as a control group. The surveys were conducted in 2019 and 2020.

The survey was carried out with the use of the MindSonar psychometric test, a functional psychological system which examines how people think in certain

situations (contexts) and what their internal values and patterns of thinking and acting are. MindSonar measures values and attributes them to 7 levels of existence in accordance with the Spiral Dynamics model, and to 32 patterns of thinking, or metaprograms (Černý, 2017; Hollander, 2014). The MindSonar test presents the respondent with 76 questions and two tasks (criteria sorting and criteria categorisation). Then, the program asks the respondent to define four things they find important in the chosen context (four criteria). Once the criteria have been defined, the respondent is asked to order them from the most to least important (hierarchy of criteria). He or she is then shown the four criteria and asked to fill in their opposites. There are five types of test items for metaprograms:

- *Identification items* – Photographs showing people thinking different things (in text balloons). The respondent picks the person who thinks most like them in that context.
- *Symbolic items* – The respondent chooses from a set of symbols.
- *Avoidance items* – An avoidance question is asked ("What do you want to prevent?").
- *Keyword items* – The respondent chooses from different keyword combinations.
- *Straightforward items* – The respondent is asked directly about the metaprogram in a question ("Do you think more like this or more like this?").

MindSonar measured the following metaprograms – patterns of thinking. They have a determining effect on the functioning of individuals, because they translate into both verbal and non-verbal behaviour, affecting emotions and feelings. They indicate certain cognitive and perceptual preferences (Bolstad and Hamblett, 2001; Brown, 2006) which filter and sort information (Brown, 2003; Brown, 2004; Hustinx and Durlinger-van der Horst, 2005). MindSonar is a process-oriented instrument. Process theories, on the other hand, attempt to provide a generalised explanation of processes and the behaviours these processes lead to, describing the major conditions necessary for explaining the process. They intend to describe how people think, what the processes are in their minds that induce their behaviour (Kispál-Vuitai, 2016). They contain constructs (Binning, 2016) that are not necessarily linked together in a coherent theory, but explain behaviour and allow to predict future behaviour. Process theories of motivation concern themselves with *how* people arrive at wanting something (Hollander et al., 2020). MindSonar measures 32 metaprograms divided into 13 inter-connected groups of thinking patterns (Table 1). The term 'metaprogram,' as well as the distinctions themselves, come from 'Neuro-Linguistic Programming (NLP)' (Bandler and Grinder, 1975, 1979). In NLP, sequences of inner sensory experience (images, sounds and feelings) were originally referred to as 'strategies' or 'programming'. Sometimes, patterns common to several strategies in the same person were noted during change of work. These distinctions were 'meta' to programming, hence the name 'metaprograms'. This is the qualitative, experiential basis of the metaprogram concepts, with NLP falling clearly in the 'process-oriented' category of theories.

Table 1

Characteristics of metaprograms in MindSonar

No.	Metaprograms	Characteristics of metaprograms
1	Proactive versus Reactive	Proactive = a preference for acting quickly and taking the initiative Reactive = a preference for waiting, considering, and reflecting
2	Towards versus Away From	Towards = a focus on achieving goals Away From = a focus on avoiding problems
3	Internal Reference versus External Reference	Internal Reference = using one's own standards in evaluations External Reference = using other people's standards in evaluations
4	Options versus Procedure	Options = a preference for many different possibilities Procedure = a preference for step-by-step planning
5	General versus Specific	General = a focus on the broad overview Specific = a focus on the small details
6	Matching versus Mismatching	Matching = a focus on what is good and correct Mismatching = a focus on what is bad and incorrect
7	Internal locus of control versus External locus of control	Internal locus of control = a focus on how someone influences their circumstances versus External locus of control = focus on how someone's circumstances influence them
8	Maintenance versus Development versus Change	Maintenance = a preference for things staying the same Development = a preference for gradual change Change = a preference for fast and radical change
9	People versus Activity versus Information	People = a focus on people and what moves them Activities = a focus on activities being done Information = a focus on information; facts and figures
10	Concept versus Structure versus Use	Concept = a focus on essentials and principles Structure = a focus on relationships between elements Use = a focus on practical applications
11	Together versus Proximity versus Solo	Together = a preference for working closely together with shared responsibility Proximity = a preference for mutual support with individual responsibility Solo = a preference for working alone
12	Past versus Present versus Future	Past = a focus on past events Present = a focus on the "here and now" Future = a focus on future events
13	Visual versus Auditory versus Kinaesthetic	Visual = a focus on images and movies Auditory = a focus on sounds and words Kinaesthetic = a focus on feelings and movement

Source: Hollander, J. (2014), MindSonar Certification Training Manual, IEP Institute for Eclectic Psychology, Staringstraat 1, 6511 PC Nijmegen, Netherlands.

The criteria indicate what someone finds important in a given context. In the TOTE-model (Test-Operate-Test-Exit) of goal-directed behaviour, the present situation is compared with a criterion in order to determine whether more operations (actions) are necessary (Miller et al., 1960). In terms of criteria, MindSonar asks the respondent to define:

- four criteria (four things they find important in the context in which their thinking style is measured for);
- a meta-criterion (what happens when the first four criteria are met);
- the opposites of all criteria (for instance, the opposite of 'Inspiration' might be, for a particular person, 'Dullness');
- hierarchy of the criteria (their order of importance).

The top two positions in the hierarchy of criteria were tested. The respondent is asked whether or not he or she would accept a *small loss* of criterion #2 in return for a *large gain* in criterion #1. For example: is he or she willing to accept *a little* loneliness in return for *a lot of* creativity? If the respondent does not accept the offer, they are directed back to their list of criteria and encouraged to make changes. Sometimes, criteria are components of or conditions for other criteria. MindSonar resolves this by encouraging respondents to combine criteria. For instance, if a respondent believes that they can only be creative together with other people, they cannot accept some loneliness to get a lot more creativity, because loneliness will in turn decrease their creativity. The respondent is then advised to combine 'creativity' and 'communication' into one new criterion ('creative communication' for instance).

Originally, MindSonar simply took stock of people's criteria by storing their verbal descriptions. This made it difficult, however, to compare criteria. For instance, three different people who all define 'honesty' as their number one criterion might enter 'lying', 'being unemotional' and 'financial theft' as their respective opposites. This illustrates the different meanings people attach to the same word. To solve this problem, the authors wanted to be able to attach numerical values to criteria, and chose the Graves (Spiral Dynamics) model. The respondent is asked to distribute balls over seven buckets to indicate what categories their criterion belongs to. Each bucket is labelled with two rotating key words representing Graves values. The more important criteria (higher in the hierarchy) carry more weight in the categorisation. This makes it possible to accurately compare and define criteria; also, the scores often offer the respondent's insight into the essence of their values.

The MindSonar test uses the Spiral Dynamics model to examine and classify values (Kompagne, 2008). This model is the effect of the research conducted by Graves, Cowan and Beck, which resulted in the concept of the development of biopsychosocial systems in adults, or the theory of levels of existence. This theory is based on the theory of systems and developmental psychology. It concentrates on the mature personality in action, together with its transformations, positive and negative traits. It integrates the roles of biological/genetic, psychological and sociocultural factors in creating levels of

existence experienced by individuals or groups (Graves, 1965; Graves, 1970; Graves, 2005; Cowan and Todorovic, 2000). Spiral Dynamics allows the understanding of internal mechanisms of decision-making and the shaping of individual behaviour through the identification of hidden values and patterns which correspond to certain levels of existence (Beck and Covan, 2006; Prinsloo, 2013).

Spiral Dynamics distinguishes between eight levels of existence, each with specific values and patterns of behaviour (Table 2), the MindSonar test does not measure 'beige' level values.

MindSonar works with a gradual responding system, meaning that the respondent does not have to make absolute yes-or-no choices. He or she indicates to what extent an alternative applies to him or herself. Cronbach's alpha reliability coefficient for this tool, measured for this research sample, is in the range from 0.7 to 0.85 for the measurements used in the test. Values and metaprograms may change depending on the situation in which a given person finds themselves, that is why MindSonar measures them in defined contexts. In the study in question, the context consisted of preferred values and modes of thinking and conduct in the workplace.

In order to test the hypotheses, statistical analyses were conducted with the use of the PQ Stat 1.6.8. program. The study applied descriptive statistics, normality tests (the Kolmogorov-Smirnov test), and tests of differences between groups (the Kruskal-Wallis ANOVA test) together with post-hoc tests (Dunn-Bonferroni).

Then, in the phase of comparisons of preferred values and metaprograms in individual generations in the workplace, normality tests were conducted first. The Kolmogorov-Smirnov test showed that the distribution of most of the tested variables, in one or in all generations, significantly deviates from normal distribution (asymptotic significance $p<0.05$). In addition, the three compared groups of respondents significantly differ in terms of their numbers. These arguments determined the selection of non-parametric tests for the analysis of differences between groups.

The theoretical concept applied in the MindSonar tool was selected by the authors of the study due to its applicability in management sciences, in particular in the field of examining levels of development, levels of awareness, methods of cognition, worldviews, methods of organising rules or logics of action among managers and leaders (Brown, 2011; Rooke and Torbert, 2005; Torbert, 2004; Aitken and Higgs, 2010; Anderson et al., 2006) or the effect of such levels on decision-making processes (Černý, 2017). The results of such studies show that the development stage of a given person affects what he or she notices or may be aware of, and thus what he or she may describe, articulate, think about, and what he or she may influence and change. Researchers believe that individuals at later stages of development demonstrate a more effective understanding and can influence other individuals from their own level or lower levels of development. This is due to the fact that they can act from earlier levels and assume developmental perspectives of those operating

Table 2

Characteristics of the levels of existence in Spiral Dynamics

Level	Dominant world-view, values (needs), behaviour	Manifestations in the organisation
1	2	3
1. Beige	**World-view: Instinctive.** Values/needs: Biological needs, survival. Behaviour: Few words, focus on actions which guarantee survival. Acquire food and roof over one's head. Instant fight/flee reactions of the reptilian brain. Instinct as the driving force.	Caring for basic needs of the body, intuition, instinct.
2. Purple	**World-view: Magical, spiritualistic, animistic.** Values/needs: Orientated at the community (clan), security and survival. Behaviour: Following orders of spiritual creatures in a mystical space. Showing loyalty to the elders, to customs, to the tribe. Cultivating sacred places, objects, rituals. Creating bonds in order to survive and find security. Living in an enchanted, magical village. Searching for harmony with the rhythms of nature.	People are strongly attached to their communities, groups. Paternalistic organisations, nepotism. Employees give their lives and souls to the organisation – like to a parent. Each one will sacrifice themselves without a question, when the group's survival depends on that. A change requires the approval of the "elders."
3. Red	**World-view: Impulsive**, mythical, the law of the strongest, "life is a jungle." A world of honour vendettas. Values/needs: Power, domination, respect, freedom, instant gratification. Behaviour: Strength and dominance are most important. Escape from the dominance of others. Avoiding shame, lack of the feeling of guilt, earning respect. Instant satisfaction of basic drives and satisfaction of whims. Fight for maintaining control at all cost. Lack of awareness of the consequences of one's actions.	Strong, directive leadership. Clear hierarchy, emphasis on power. People need the domination of a greater force to gratify them and keep their desires under control. Employees will put up with a lot, if their basic needs are regularly satisfied. Salary is an effect, everyone gets what they deserve. No one can be trusted. Rewarding for subordination, punishing for disloyalty. Strict control of information and choices.
4. Blue	**World-view: Absolutist**, **mythical, fundamentalist**. Order based on higher laws. Values/needs: Justice, unambiguous truth, stability, identity, predictability, clear rules. Behaviour: Sacrifice of an individual for group goals. Order and stability, people share the same beliefs, law and ethos. Each human has their own place in accordance with an overriding plan. Hierarchical structures, bureaucracy, commands and control.	Employees are cogs in the machine of the system, they perform roles which they are destined for. Hard work is the only right way to be appreciated and to keep one's job. People work best when they know how they should do something correctly, commanding attitude. Authority is earned by others through proper rules, not through fear. Employees are loyal, if the organisation cares for their well-being. A change must be ordered by authorities, consistent with the rules.
5. Orange	**World-view: Modernistic, individualistic, meritocratic, materialistic, rationalistic.** Values/needs: Material success, status, self-fulfilment, competition, consumption, independence. Behaviour: Striving for success, achievements, autonomy and constant changes. Searching for a "good life" and wealth. Development through searching for the best solutions, experiments, advanced technologies. Education through personal experience of trials and errors. The world is rational and full of opportunities. Strive for independence and fulfilment of one's goals. What makes one win is competence, rivalry and strategic thinking.	Constant assessment of results. Competition increases productivity. Humans are driven by: development, success, growth, achievements, promotion and material rewards.

1	2	3
6. Green	**World-view: Pluralistic, post-modernist, ecological, egalitarian. Social liberalism.** Values/needs: Harmony, reciprocity, own truth, commonality, equality. Behaviour: Commonality and cooperation. Sharing the community's resources between everyone. Unanimous decision-making. Involvement in legitimate social projects. Emotionality, empathy, sensitivity to injustice.	Pressure on consensus and compromise. People want to feel accepted by others. Sharing and cooperation lead to better results than rivalry. All members of an organisation should have the opportunity to speak and be included in decision-making processes. The organisation is responsible for the well-being of its community. People are motivated by care for relationships, being a part of a community.
7. Yellow	**World-view: Post-rational, global, network-like. Deep ecology.** Values/needs: Independence, development, sense of meaning, health of the system. Behaviour: Striving for the synthesis of various world-views. Acting in one's own interest without harming others. Experiencing the life to the full, here and now. Striving for growth, evolution, flexibility, spontaneity, usefulness and open systems.	People achieve fulfilment through work which matches who they are by nature, concentration on functionality, talents and competences. Emphasis on access to knowledge, information and experience. People are motivated by learning and understanding, rather than salaries and punishments. People value freedom and valence of work, without instructions on how it should be done.
8. Turquoise	**World-view: Holistic, integral, transpersonal.** Values/needs: planetary community, altruism, transcendence. Behaviour: Using all previous levels, expansion, multi-dimensionality, systemic awareness. Great emphasis on the welfare of all living creatures. Expanding consciousness with all known methods. The sense of "Self" as a part of a larger, conscious whole, a part of global networks. Striving for a minimalistic lifestyle – "small is beautiful."	Holistic view on reality. Ability to combine systems and paradigms. Simultaneous functioning on the rational and on the intuitive level. Lack of egotism. Spiritual bonds push people and the organisation towards each other. Work must have meaning, must serve the welfare of all. The world is a unity of balanced, interacting forces. Organisations are responsible for their effect on human lives and the environment.

Source: Beck, D. E. and Cowan, C. C. (2006), Spiral dynamics: Mastering values, leadership and change, Malden: Blackwell Publishing.

Graves C.W. (2005), The newer- ending quest: Clare W. Graves explores human nature, ECLAT Publishing, Santa Barbara.

within earlier stages. It can be assumed, therefore, that if there are differences between the participants belonging to a given generation, it will be possible to identify them in detail using MindSonar.

4. Research findings and discussion

4.1. Generational differences in values

An analysis of preferred values in the workplace conducted in accordance with the Graves model (Table 1) shows that values from the "yellow," "blue" and "green" level are dominant and equally important for each generation. Differences between generations are negligible. Generations X and Z show equal preference for values

from the "yellow," "green" and "blue" level. In generation Y, values from the "blue" level are chosen more often than the values from the "green" level, while the values from the "yellow" level appear more often than in generations X and Z. Of all the tested generations, generation X chooses values from the "orange" level least often, however preferring values from the "turquoise" level more often than other generations (Table 3).

Table 3

Differences in values across generations

Levels of existence and their corresponding values	Descriptive statistics							Differences test	
	X		Y		Z		H	P	Significant differences
	M	SD	M	SD	M	SD			
Purple	1.45	1.14	1.42	1.11	1.22	1.04	3.19	0.20	
Red	1.32	0.92	1.27	0.94	1.34	0.89	1.00	0.60	
Blue	1.78	0.81	1.81	1.08	1.76	1.14	0.71	0.70	
Orange	1.01	0.99	1.36	1.02	1.50	1.14	5.89	0.05**	X<Z
Green	1.83	1.32	1.63	0.96	1.78	1.04	1.78	0.41	
Yellow	1.87	1.19	2.19	1.35	2.14	1.12	1.46	0.48	
Turquoise	0.70	0.89	0.32	0.60	0.24	0.55	8.05	0.02*	X>Y, X>Z

Notes: *Significant difference at the level of $p<0.05$; ** Borderline significant.

Source: own elaboration.

A detailed analysis of the results demonstrates a significant difference in the frequency of the occurrence of values from the "turquoise" level among the youngest and the oldest respondents. These values are chosen significantly more often by generation X than generation Z. There are differences between generations also in terms of the frequency of selecting values attributed to the "orange" level. The paired difference test (post-hoc) showed that a significant difference applies to the X-Z generational pair. Generation Z chooses values from this level significantly more often than generation X. The differences in choosing values from other levels are not statistically significant.

4.2. Generational differences in metaprograms

Analysing the choices of generation X (Table 4), it can be noted that they achieve a high result for the "matching," "internal locus of control," "general" and "towards" metaprograms (Table 2). They also stand out regarding the mode of thinking cha-

Table 4

Differences in choosing metaprograms across generations

Metaprograms	Descriptive statistics						Differences test		
	X		Y		Z		H	P	Significant differences
	M	SD	M	SD	M	SD			
Proactive	5.03	1.87	4.75	1.98	4.63	1.71	0.98	0.61	
Reactive	4.97	1.87	5.25	1.98	5.37	1.71	0.98	0.61	
Towards	6.69	1.46	6.58	1.50	6.40	1.66	0.87	0.65	
Away from	3.32	1.46	3.43	1.50	3.61	1.66	0.89	0.64	
Internal reference	5.50	.08	5.36	1.77	4.89	1.88	7.32	0.03*	Y>Z
External reference	4.50	2.08	4.64	1.77	5.11	1.88	7.32	0.03*	Z>Y
Options	5.86	1.65	5.47	1.74	5.49	1.55	2.01	0.37	
Procedure	4.14	1.65	5.43	1.74	4.51	1.55	2.01	0.37	
Matching	7.19	1.26	6.53	1.63	6.23	1.49	9.92	0.01*	X>Z
Mismatching	2.81	1.26	3.47	1.63	3.78	1.49	10.10	0.01*	Z>X
Internal locus of control	7.08	0.94	6.63	1.16	6.43	1.36	7.18	0.03*	X>Z
External locus of control	2.92	0.94	3.37	1.16	3.57	1.36	7.18	0.03*	Z>X
General	6.92	1.96	4.80	2.14	5.38	1.99	25.72	<0,001***	X>Y, X>Z, Z>Y
Specific	3.08	1.54	5.20	2.14	4.62	1.99	25.73	<0,001***	Y>X, Y>Z, X<Z
Maintenance	2.35	1.24	2.25	1.49	2.34	1.49	0.15	0.93	
Development	5.28	1.09	5.29	1.45	5.34	1.49	0.82	0.66	
Change	2.37	0.80	2.46	1.33	2.32	1.36	0.52	0.77	
People	3.14	0.90	2.95	1.`123436	3.13	1.36	1.67	0.43	
Activities	3.39	0.79	3.48	1.11	3.41	1.99	0.38	0.83	
Information	3.48	1.11	3.58	1.33	3.48	1.99	1.13	0.57	
Concept	2.77	1.01	2.89	1.16	2.97	1.13	1.06	0.59	
Structure	3.18	1.07	3.10	1.07	3.07	1.01	0.41	0.81	
Use	4.04	1.38	4.02	1.19	3.96	1.11	0.03	0.98	
Together	3.21	1.12	2.77	1.46	2.79	1.6	2.75	0.25	
Proximity	4.22	1.13	4.75	1.35	4.52	1.37	5.90	0.05	
Solo	2.57	0.82	2.48	1.49	2.69	2.03	0.39	0.82	
Past	1.37	1.59	1.61	1.03	1.58	1.04	0.89	0.64	
Present	4.17	1.66	4.39	1.49	4.21	1.27	0.96	0.62	
Future	4.46	0.85	4.01	1.45	4.22	1.34	3.38	0.18	
Visual	3.54	1.17	4.02	1.38	4.33	1.31	11.45	0,003**	Z>X, Z>Y
Auditory	2.64	1.58	2.49	1.19	2.35	1.21	2.28	0.32	
Kinaesthetic	3.82	1.14	3.49	1.50	3.33	1.24	3.70	0.16	

Notes: *Significant differences at the level of $p<0.05$; **Significant differences at the level of $p<0.01$; ***Significant differences at the level of $p<0.001$.

Source: own elaboration.

racteristic for the "internal reference" metaprogram. They achieve low results for the following metaprograms: "mismatching," "external locus of control," "specific," "auditory" and "external reference." The respondents from generation X do not tend to take action in line with the "past" metaprogram, instead, they opt for "future" and, to an almost identical degree, for "present."

The results of generation X are similar to the results of generation Y (Table 4). Its representatives prefer the following programs: "matching," "internal locus of control" and "towards," "internal reference." The differences in the results between metaprograms are slightly less distinct than those in generation X. Unlike in generation X, generation Y demonstrates a higher propensity for the "specific" rather than the "general" metaprogram. Furthermore, in action, it is more oriented towards the "present" rather than the "future" metaprogram, and, similarly to generation X, it is not oriented at "past."

Generation Z also shows tendencies similar to generations X and Y (Table 4),still, three metaprograms prevail: "towards," "matching," "internal locus of control." The preferences are slightly less visible than in generations X and Y. Just like generation X, generation Z shows preference for the "future" and "present" metaprograms, and, similarly to generations X and Y, it is not "past"-oriented. Unlike generations X and Y, generation Z prefers an "external reference"-oriented mode of thinking.

A detailed analysis of the results in the scope of metaprograms shows that generation X significantly more often than generation Z chooses the "matching" metaprogram. In turn, generation Z significantly more often than generation X chooses the "mismatching" metaprogram. The option "internal locus of control" is also significantly more often chosen in generation X than in generation Z. A characteristic trait of generation Y is that its orientation towards the "specific" metaprogram is significantly greater than in other groups. Generation Y more often than generation Z chooses the "internal reference" metaprogram. In generation Z, there are significantly more "visual" choices than in generation X.

4.3. Discussion

In the workplace, all generations demonstrate a similar preference for values corresponding to the levels of existence determined by Spiral Dynamics as "yellow," "green" and "blue." An analysis of the metaprogram tests suggests that following metaprograms achieve high results in all generations: "towards," "matching," and "internal locus of control." Other results are more or less counterbalanced, which means that the respondents do not show any clear preferences in relation to these metaprograms in the workplace.

Values from the "yellow" level are most significant in all generations. This means that what counts more for them is learning and understanding rather than salaries and punishments. They want to work in a way that will provide them with self-fulfilment. They value freedom and spontaneity at work, without instructions on how it should

be done, and expect that the organisation will benefit from their diverse competences, skills and unique talents. Their development is driven by the will to explore, gain knowledge, create flexible structures and integrate a multitude of solutions and approaches. The obtained test results differ from the results presented by other researchers (Jurkiewicz and Brown, 1998; D'Amato and Herzfeldt, 2008; Lester et al., 2012; Roongrerngsuke and Liefooghe, 2013), which indicate that younger generations put more emphasis on life-long learning and personal development than older generations.

The next result in all generations was obtained by the values from the "green" level, which means a preference for values resulting from commonality. For persons preferring this level of values, sharing and participation are better than competition. They value the commitment and participation of all employees in decision-making processes, because diversity enriches the results. Contact with other people, sharing their experiences and maintaining harmonious relationships are important to them.

The obtained result is slightly different from the results presented by other researchers. In some of them, it was concluded that older generations are more willing to co-operate with others and prefer team-work more than younger generations, whereas others suggest the increased significance of team-work and social activities in younger generations (Jurkiewicz and Brown, 1998; Yrle et al., 2005; Gursoy et al., 2008; Cogin, 2012; Lub et al., 2012).

The third result in generations was obtained by values from the "blue" level. This means that people need structures and order, they have to be informed in order to be able to do things properly. They work for the right cause and in order to retain their jobs; work provides them with a sense of security.

The obtained results are in line with the results of the research of Brunetto et al. (2012), which demonstrates that all generations put emphasis on strong supervisory relationships. Leschinsky and Michael (2004), Wong et al. (2008), Takase et al. (2009), Lub et al. (2012), Hansen and Leuty (2012) demonstrated that each generation deems job security important.

A detailed analysis of the results reveals a significant difference in the values from the "turquoise" level among the youngest and the oldest respondents (Table 3). These values are chosen significantly more often by generation X than generation Z. Values from this level are connected with: responsibility for human life and Earth as a planet, holism, balance and the integration of various approaches, which means that these persons wish to feel responsible for a greater whole. They value a broad and integrated image of reality, and think highly of everything that is ecological. They prefer minimalism. Work must have meaning and must serve the welfare of all. The significance of having useful work is also confirmed by Hajdu and Sik (2018), who concluded that it increases with age in European and Euro-Atlantic countries.

Differences between generations can also be found in values attributed to the "orange"" level. Generation Z chooses values from this level significantly more often than generation X. This means that they are more likely to prefer values

connected with rivalry. Other important values for this level include: success, achievements, wealth, effectiveness, progress and influence. Similar results were obtained by Cennamo and Gardner (2008), who conclude that younger generations put more emphasis on "status" than older ones. According to Smola and Sutton (2002), Leschinsky and Michael (2004), Wong et al. (2008), younger generations pay more attention to opportunities for promotion and want to be promoted more quickly than older generations, whereas other studies indicate that each generation considers competitive remuneration important in their work (Jurkiewicz and Brown, 1998; Leschinsky and Michael, 2004; Takase et al., 2009; Lub et al., 2012; Roongrerngsuke and Liefooghe, 2013).

The measurement of differences in values between generations in the workplace was conducted with the use of the Spiral Dynamics theoretical model, in which individual values are attributed to their corresponding levels of existence. In turn, the level of existence on which a given individual operates is the effect of the interaction of biological, psychological and social factors. Therefore, the values change over time, and the dynamics of these changes can be different for individual persons or groups. Research shows that values at work are also unstable and are subject to change during an individual's transition from puberty to adulthood (Jin and Rounds, 2012).

Hence the generational differences observed in the results of conducted studies may be more connected with the age of the respondents or the stage of their life (Wong et al., 2008) than with their generational identity. The representatives of generation X are most likely at different career stages, they have a well-established professional standing, they have achieved financial stability, they have invested more in their work, organisation, career than persons who are only starting work (Ng and Feldman, 2008). Thus, it is completely justified to expect the younger employees to be more interested in the development of their careers and being promoted, building economic security, purchasing houses and starting families (i.e. values from the "orange" level), while the older persons will put less emphasis on such values. Those results partly confirm the outcome of the research of Twenge et al. (2012), that younger generations put more emphasis on external values, e.g. money, fame (values from the "orange" level), while civic participation, e.g. through interest in social problems (values from the "turquoise" level), decreases with age.

The high result for the "towards" metaprogram and the low result for the "away from" metaprogram means that the representatives of the studied generations focus on achieving goals. Their strong motivation is the mere completion of an activity and they usually do not pay attention to what may go wrong. The high result for the "matching" metaprogram and the low result for the "mismatching" metaprogram means that they strongly focus on what is good, correct and which they agree with in their actions.

The studied representatives of generations X, Y, Z achieve a high result for the "internal locus of control" metaprogram and a low result for the "external locus of

control" metaprogram. This means that they strongly believe that they have influence on their surroundings and can shape them. They demonstrate high optimism regarding their own agency and effect on the change of their surroundings. The respondents also prefer the "proximity" metaprogram, which means that they prefer remaining in stable though relaxed cooperation with others, allowing mutual help and support, should such need arise. They clearly opt for project cooperation with others, without sharing responsibility. They want to be sure what each member of the group will contribute, and they want each person to be responsible for his or her work.

They quite strongly focus on the here and now, demonstrated by the high result of the "present" metaprogram. They concentrate a lot on a broad picture of a given situation and usually do not pay attention to details (the "general" metaprogram). They focus on the "future" and are interested in what will happen. They show a talent for predicting the future, and assess the present based on its effect on the future. The strength of this metaprogram is the ability to create plans.

The results of the tests indicate that a greater similarity may be observed between generations X and Y, while generation Z differs from both of them (Table 4).

Generation Z significantly more often than generation X chooses the "mismatching" metaprogram. Persons thinking in terms of "differentiating" concentrate on what is not going well, what is not correct, what fails to meet their criteria. The "external locus of control" answer is significantly more often chosen in generation Z than in generation X. Persons with the "external locus of control" metaprogram feel that matters depend on external circumstances. They perceive their own behaviour as an effect rather than a cause.

Generation Z also more often than generation Y chooses the "external reference" metaprogram. This means that they base their judgement on what others think is important. They find motivation outside, beyond themselves. The criteria of others determine their actions. In order to function, they need feedback and other opinions. They easily accept decisions made by others, and cope well in situations which require adhering to instructions, customer support and service. Some studies of other researchers partly confirm the obtained results. For instance, Gursoy et al. (2013) found that younger generations express greater needs in the scope of providing advice, guidelines and direction from their leaders/ mentors at work. Other studies found that generation Y has a greater need than older generations to be acknowledged, appreciated and provided with instant feedback (Yu and Miller, 2003; Busch et al., 2008; Lester et al., 2012; Gursoy et al., 2013; Mencl and Lester, 2014).

Indeed, in generation Z there are significantly more persons with the "visual" metaprogram than in generation X,they prefer the sense of sight, perceive the world in images, photographs and films. Their manner of thinking has a shape, colour, depth, etc. They often speak quickly and use high tones. Their ideas, memories and concepts have a form of mental images. They learn through visual information and first need to see things in order to be able to understand them and start taking action.

The generational differences in the area of metaprograms, similarly to differences in values, as observed in the results of conducted tests, can be explained through factors which are better backed by theories and data than arguments of generational identity. These factors are: individual traits, historical period in which persons are assessed (Costanza et al. 2012), external environmental factors, such as technology (Sackett, 2002), and developmental changes which occur in humans over time (Elder, 1994). The representatives of generation Z are only just entering adulthood and the labour market, they lack professional experience and consequently they demonstrate a greater externalisation of the locus of control (Twenge et al., 2008), putting more emphasis on such aspects of work as mentoring, training (Loughlin and Barling, 2001; Lyons, 2004) and development (Iorgulescu, 2016). These results may explain the increased significance of the "external locus of control" or "external reference" metaprogram in younger generations.

The basic differences between generations as diagnosed by Twenge (2010), which concern, among others, the manner of communication, using modern technologies or work methods, indicate a connection with progressing globalisation, development of the Internet and Internet-based technologies (Lyons, 2004). These studies show that the most adjusted generation in terms of technological skills is generation Z. Since such skills are connected with a specific channel used for obtaining information and for communication, this may explain the higher proportion of the "visual" metaprogram in generation Z in relation to other generations.

As argued by Costanza and Finkelstein (2015), notwithstanding whether generational differences are real or not, people believe they exist. Therefore, the obtained results may prove useful in taking actions directed at reducing conflicts or misunderstandings stemming from generational stereotypes. In organisations with employees of diverse ages, the obtained study results may help managers focus on real, diagnosed differences occurring in the staff. In spite of only a few differences between the examined generations in terms of values and patterns of thinking in the workplace, the obtained results may be used by organisations to determine the communication of priorities for present and future employees with a view to achieving a high level of matching of mutual expectations. The development and communication of organisational priorities in combination with appropriate techniques of recruitment and assessment may help HR specialists reduce staff turnover and costs of recruitment.

One of the limitations of this study was the use of cross-sectional data and the division of respondents into groups by age. This made it difficult to determine whether differences between generations result from age, stage of career, stage of life, or from actual generational differences. In order to separate generational differences from age and other variables, longitudinal studies should be conducted. Real generational differences may be identified only through a study of groups over time. Another limitation was the research sample, which is homogeneous in terms of

education and nationality of the respondents. Further exploration of the tested variables on a diverse sample in terms of education or social status of the respondents could be recommended.

Conclusion

An analysis of the test results leads to a conclusion that neither of the above hypotheses may be unequivocally accepted or rejected. The results presented by the researchers indicate that the generations in question demonstrate numerous similarities, and statistically significant differences between the generations in the scope of tested variables are sparse (for 2 out of the 7 levels of existence and their corresponding values, and in 9 out of the 32 measured metaprograms). The test results also prove that a greater similarity of preferred values and patterns of thinking in the workplace can be observed between generations X and Y, while generation Z differs from them both.

A detailed analysis of the results indicates that the group of representatives of generations X, Y, Z studied by the researchers have numerous common features in preferred values and patterns of thinking in the workplace. The values which are most important to them in the workplace are: freedom, personal development, independence, creativity, being inquisitive, structure and order, duty, discipline, reliability and control. They prefer being independent, favour critical thinking and a will to learn as well as maintaining order and performing duties, compliance with rules and behaving in line with regulations. Equally important to them is social contact as well as consensus and solidarity, warm relationships, being helpful, having empathy, sharing ideals and solidarity with others.

Generation X is orientated towards the future and the future situation more than other generations. Generation X, as the oldest one, tends the most to choose values resulting from responsibility for the fate of future generations, namely values resulting from the "turquoise" level of existence.

Generation Z, socialised with the electronic media of transmitting and receiving information, demonstrates a higher propensity for perceiving reality through the sense of sight more than generations X and Y. As the age of the respondents increases, so does the sense of agency ("internal locus of control"). The youngest generation is the most other-directed and has the least developed own standards of judgement, which may make its representatives seem more reactive in action and may need permanent feedback.

The youngest generation shows the greatest propensity for preferring the following values: results, development of competences, effectiveness, success, effects, progress, competition, being promoted as well as tangible benefits (values characteristic for the "orange" level of existence).

To sum up, the results of this study indicate the existence of both similarities and differences between the generations in terms of the preferred values and patterns of thinking at work. These results partly confirm those found in the literature. Although

the identified differences are statistically significant, they are minimal and occur in the case of only a few of the tested variables. Most of the observed differences can be explained by differences in the stage of life of the respondents rather than by generational differences. Furthermore, a detailed analysis of the collected data indicates the existence of greater differences between individuals in a single generation than between various generations. From this perspective, it appears significant to extend the research by taking into account the personality-related variable.

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