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Teachers' perception of their self-efficacy from the perspective of the Big Five Theory of Personality

**Poczucie własnej skuteczności nauczycieli
z perspektywy Pięcioczynnikowej Teorii Osobowości**

Abstract: In the article, on the background of theoretical considerations on the meaning of the sense of self-efficacy in the work of a modern teacher functioning in the changing conditions of the 21st century reality and the role that personality (in terms of the Five-Factor Theory of Personality by Paul T. Costa and Robert R. McCrae) may play in shaping this key factor, the results of empirical research conducted with the participation of Polish and American teachers are presented. The analyzes proved that the respondents who were characterized by a statistically significantly higher level of self-efficacy were also characterized by such an intensity of personality traits in terms of the Big Five (neuroticism, extraversion, openness to experience, agreeableness and conscientiousness), which corresponded to the pattern of teacher personality, which has been present in the pedagogical discourse over the years.

Keywords: teacher, self-efficacy, personality, vocational efficacy.

Introduction

The quality of a contemporary individual's daily work is undoubtedly conditioned by a whole range of highly diverse factors - both external (e.g. the prevailing culture or climate in his or her workplace) (cf. Schein, 2004; Nowosad, 2019) and internal, constituting components of his or her

broadly understood personal potential (cf. Kwiatkowski, S. M., 2018; Kwiatkowski, S. T., 2018). The leitmotif of the considerations presented later in this article and the empirical analyses that elaborate on them is the assumption that the more complex the reality around us becomes (see Bennet and Lemoine, 2014; cf. Kwiatkowski, S. T., 2021a, pp. 90-91), the more important appears the individual's conviction that he or she has the capacities and resources necessary to successfully face the challenges and the numerous difficult situations that appear. This seems to play a leading, even primary role from the point of view of the actions taken by the individual and the results achieved as a consequence. It should be noted that, admittedly, among the professions operating on the contemporary labour market there are many in which the performance of daily duties is inextricably linked with the need to cope with ambiguity and a high degree of complexity of tasks and the conditions in which they must be performed, however, from the perspective of broadly understood professional responsibility, the one whose essence and mission is to shape the knowledge, skills and social competence of subsequent generations of young people (cf. Kwiatkowski, S. M., 2021) is invariably at the forefront of such considerations. The profession in question is, of course, teaching, which at present - with much more certainty than before - can be described as being practised under conditions of multifaceted indeterminacy, ambiguity, inconsistency and high levels of professional workload (Kwiatkowska, 2008, pp. 11-13; cf. Lewowicki, 2007, p. 43) (i.a., in connection with the Covid-19 pandemic and its numerous consequences) (cf. Kwiatkowski, S. T., 2021b; Pyżalski, 2020).

It seems reasonable, therefore, to devote attention both to the perception of one's self-efficacy, a factor playing a key role in laying the foundations of the aforementioned teachers' view of their ability to fulfil the tasks awaiting them, and to selected factors playing a fundamental role in its formation.

Perception of one's self-efficacy - school context and relationship to personality

Perception of one's self-efficacy (sometimes also referred to as a **sense of self-efficacy** or simply **self-efficacy**, cf. Bańka, 2016), which lies at the heart of social learning theory (socio-cognitive theory) by Albert Bandura (1971; 2007; cf. Bańka, 2016, p. 7; Oleś, 2011, p. 221-240; Oleś & Drat-Ruszczak, 2018, pp. 712-713), is defined as a subjective belief (expectation) of an individual that he or she has the abilities (internal resources) necessary to cope successfully in the future in a specific and, extremely important from the perspective of this article, often new, unpredictable, ambiguous and stress-generating

situation, by achieving a level of performance on a task that is important to him or her, which will make him or her able to exert the desired influence on events that the individual in question finds significant or to achieve his or her important life goals (Bandura, 1994, p. 71; Bussey and Bandura, 1999, p. 691; cf. Cervone and Pervin, 2011, p. 538; Oleś, 2011, p. 224; Strycharczyk and Clough, 2017, pp. 109-114). The cited definition thus clearly indicates that self-efficacy plays an extremely important role in activities undertaken in conditions of broadly understood ambiguity and high uncertainty, which in a way that is difficult to overlook is related to the aforementioned characteristics of the realities of the work of a contemporary teacher, exercising his or her duties in a fluid and dynamically changing reality of the pandemic era. Of key importance in the analysed context is undoubtedly the fact that the discussed construct belongs to the group of factors determining the widely understood professional effectiveness of teachers, which can be defined as their ability to achieve the goals set before them, taking into account both their ability to cope with the numerous challenges and burdens characteristic of their daily educational work, as well as their ability to optimally develop the internal potential of the students entrusted to their care (Kwiatkowski, S. T., 2018, p. 29; cf. Gaś, 2002, pp. 57-58).

In this connection, it is worth taking a closer look at what exactly A. Bandura's concept of self-efficacy as a dimension between the poles of which individuals can be located (Bandura, 1994, p. 71; cf. Bubble, 2016, pp. 10, 31-32; Cervone and Pervin, 2011, p. 538) - has made it possible to distinguish two main groups of people:

1. **People with a high sense of self-efficacy** – their expectations in the analysed area positively affect their wellbeing and mood, as well as are conducive to their broadly understood success. Such persons are characterised by a high degree of self-confidence in their own capacities and abilities, viewing difficult tasks above all as challenges they are able to overcome - an attitude that fosters their readiness to engage intensely in activities, develops their interests and reinforces their tendency not only to set ambitious goals for themselves, but also to be highly persistent and to experience low levels of anxiety when working towards them. On the contrary, they tend not only to maintain their efforts, but also to increase them, and even when this does not work, they are able to recover quickly from failure, maintaining their sense of self-efficacy. It should be emphasised that when people in this group experience failure, they most often attribute it internally, which means that

they see the reason for their failure in terms of insufficient effort or lack of necessary – and obtainable – knowledge and skills.

2. **People with a low sense of self-efficacy** – as a result of their inherent conviction of the low level of their own abilities, they show a very strong tendency to avoid engaging in tasks with a high level of difficulty, which they perceive as a threat. They are characterised by a low level of personal aspirations and involvement in the process of achieving their goals. When confronted with demanding tasks, they focus mainly on the potential obstacles they will have to overcome and on the expected failures (including the negative consequences thereof), instead of focusing on the actions necessary to achieve the desired result. It is worth noting that, in contrast to people with high self-efficacy, they find it very difficult and take longer to regain confidence in their abilities after a failure, which adds to their perceived reluctance to engage in difficult situations. This group is characterised by low self-confidence, so that even a minor setback can lead to its further decrease (which is significantly associated with their high level of depression and vulnerability to stress).

The juxtaposition of those located at opposite poles of the self-efficacy dimension certainly makes it possible to conclude that - given, among other things, the extremely complex and rapidly changing realities of working in the contemporary education system - it is highly desirable for teachers to display the highest possible intensity of this factor, which makes it worth taking a slightly closer look at its selected determinants. In view of the subject matter of the present article, it should be emphasised that this group undoubtedly includes a factor which, in essence, defines the framework of who an individual is and who they become in the course of their life. This factor is the eponymous personality, understood as a central psychological construct, conditioning - directly or indirectly - the entirety of an individual's functioning in general (cf. Oleś and Drat-Ruszczak, 2018, pp. 652-653).

The teacher's personality and the role it plays in the process of effective fulfilment of educational duties has long been a subject of interest in various branches of pedagogy, with pedeutology at the forefront (cf. Dawid, 1946; Kreutz, 1959; Kwiatkowski, S. T., 2019; Szempruch, 2013, pp. 113-119) and - in view of this - this issue does not require further discussion here. However, it is worth considering the impact of personality - in terms of **the Five-Factor Theory of Personality** by Paul T. Costa and Robert R. McCrae (1992, 2008; cf. Oleś & Drat-Ruszczak, 2018, pp. 750-752; Kwiatkowski, S. T., 2018,

pp. 188-189), or rather - the intensity of each of its constituent traits - neuroticism, extraversion, openness to experience, agreeableness and conscientiousness (cf. Polczyk, 2009; Szpitalak and Polczyk, 2009; Siuta, 2009; Ziółkowska, 2009; Hołda, 2009), exerts an influence on an individual's sense of self-efficacy. This issue is particularly relevant from the point of view of the discussion, which has been going on for many years, in which there appear voices about the necessity of recruitment for studies preparing for work in the teaching profession and for pre-school/school work primarily (or, if it were possible, exclusively) people characterised by a specific pattern of personality traits that is optimal from the point of view of effective fulfilment of the teaching mission (cf. Kwiatkowski, S. T., 2019, pp. 170-178, 192-211) - further empirical evidence in favour of the thesis that there exists a significant relationship linking the desirable pattern of such traits with self-efficacy may prove to be particularly important and constitute an important argument that can be used in the next iteration of the aforementioned discourse. This is crucial because a teacher's characteristic sense of self-efficacy not only has a significant impact on his or her professional efficacy in general, but also plays a decisive role in the process of his or her shaping an identical sense in the students entrusted to his or her care (Kwiatkowski, S. T., 2018, pp. 402-409; Bandura, 1994, p. 72; Bańka, 2016, pp. 14-15), which in turn conditions both their school achievements and (at least to some extent)¹ their achievements in adult life (both professional and private). If, therefore, the intensity of particular personality traits is important from the point of view of shaping/reinforcing teachers' belief in their own abilities and determines their achievement of the goals highlighted above, it is certainly worth all the necessary attention and - if possible - drawing conclusions that can become the basis for formulating recommendations whose possible implementation into everyday practice (including in the area of the aforementioned recruitment process) may prove beneficial from the perspective of the functioning of the entire education system.

¹ It is important to point out that the plasticity (susceptibility to change) of self-efficacy means that even optimal action by the teacher aimed at strengthening this factor in the pupils in his or her care will not result in a sustained high level of self-efficacy - as much depends on both their subsequent experiences (successes and failures) and other influences to which they will be subjected (e.g. in the family and peer environment and, later, in the workplace).

The method

The analyses described in the next section used data collected using the following research tools:

1. **The NEO-FFI Personality Inventory** is a questionnaire used to diagnose personality traits included in the Five-Factor Model of Personality. The authors of the original version of the tool are P. T. Costa and R. R. McCrae, while its Polish adaptation was prepared by Bogdan Zawadzki, Jan Strelau, Piotr Szczepaniak and Magdalena Śliwińska (2010). The Inventory consists of 60 test items that form 5 scales measuring the intensity of the Big Five personality traits: neuroticism, extraversion, openness to experience, agreeableness and conscientiousness.

Once the raw scores for each of the personality traits included in the model and in the test have been calculated, they are converted into normalised scores - values expressed in stens. The creators of the tool made the following assumption regarding the distribution of the normalised scores:

- 1-3 sten indicates a low score
- 4-6 sten indicates an average (medium) score
- 7-9 sten indicates a high score.

2. **Test Poczucia Skuteczności (TPS - eng. Test of Self-Efficacy)** – a tool by M. Chomczyńska-Rubacha and K. Rubacha (2013), used to measure self-efficacy, based on the concept of A. Bandura. The TPS questionnaire is composed of 17 items - statements to which the respondent should respond on a 4-point scale, where 1 means „definitely no” and 4 means „definitely yes”. The result obtained by summing up the points awarded to the person surveyed for the answers given to each of the TPS questions is an indicator of his or her perception of self-efficacy.

The tool is characterised by a high, psychometrically satisfactory level of internal consistency (reliability) and relevance.

The result obtained by adding up all the points, expressed in raw score, should be converted, using the norm tables prepared by the authors of the tool, into a normalised score - expressed in sten values. The breakdown of the scores obtained in stens is as follows:

- 1-4 sten - low score,
- 5-6 sten - average score,
- 7-10 sten - high score

A total of 283 primary and secondary school teachers participated in the study. These were both teachers working in Poland (primarily in Warsaw and Cracow schools) and in Polish schools in the United States. The research sample was purposive and consisted of teachers who responded positively to

the proposal to participate in the study, which was communicated to them through the managements of their employing educational institutions. In addition to the tools highlighted above, respondents also completed other questionnaires², however the data obtained using these were not included in this text.

Results of own research

The aim of the statistical analyses presented below was to determine whether there were statistically significant correlations between the Big Five personality traits of P. T. Costa and R. R. McCrae and the self-efficacy of the surveyed teachers. However, the aim was not to examine the degree of correlation of the factors in question, but to determine whether the intensity of the individual Big Five traits differentiated the subjects in terms of their respective levels of self-efficacy. Thus, the question(s) was whether such a difference would occur between subjects scoring low and high on the NEO-FFI Inventory scale used to measure each of the personality traits included (e.g. whether extroverted subjects differed in this area from introverted subjects, and, if so, what was the direction of this difference and whether it was statistically significant).

As a first step, necessary both because of the need to present the results of the research at the core of this article and to present the data obtained as clearly as possible, it is necessary to cite the distribution of the results obtained with the NEO-FFI Personality Inventory, broken down into low, average and high scores for each of the Big Five traits, since it was the groups created on this basis that made possible the comparative analyses at the core of the present article (Table 1).

Table 1. Scores of surveyed teachers on the Big Five personality traits, broken down into low, average and high scores

Neuroticism	Frequency	Percentage
Low score (1-4 sten)	73	25,8
Average score (5-6 sten)	145	51,2
High score (7-10 sten)	65	23,0
Total	283	100,0

² It should be noted that the analyses presented in this text constitute a single element of a broader research project - which the author realised - together with dr Agnieszka Muchacka-Cymerman (Pedagogical University of the Commission of National Education in Krakow) - over the course of 2021 and 2022.

Extraversion	Frequency	Percentage
Low score (1-4 sten)	21	7,4
Average score (5-6 sten)	101	35,7
High score (7-10 sten)	161	56,9
Total	283	100,0
Openness to experience	Frequency	Percentage
Low score (1-4 sten)	33	11,7
Average score (5-6 sten)	103	36,4
High score (7-10 sten)	147	51,9
Total	283	100,0
Agreeableness	Frequency	Percentage
Low score (1-4 sten)	29	10,2
Average score (5-6 sten)	74	26,1
High score (7-10 sten)	180	63,6
Total	283	100,0
Conscientiousness	Frequency	Percentage
Low score (1-4 sten)	27	9,5
Average score (5-6 sten)	74	26,1
High score (7-10 sten)	182	64,3
Total	283	100,0

Source: own research.

Another key step in the area of analysis was the previously indicated intergroup comparisons to determine whether there were statistically significant differences in self-efficacy between the identified groups. Due to the fact that the groups of teachers presented in Table 1, distinguished on the basis of the division of the results obtained through the five scales of the NEO-FFI Personality Inventory into low, average and high, turned out to be unequal - which was confirmed in the case of each of the Big Five traits by a statistically significant result of the chi test² (χ^2) (neuroticism: $\chi^2 = 41.159$; $p < 0.001$; extrovert: $\chi^2 = 104.594$; $p < 0.001$; openness to experience: $\chi^2 = 70.078$; $p < 0.001$; agreeableness: $\chi^2 = 127.428$; $p < 0.001$; conscientiousness: $\chi^2 = 133.915$; $p < 0.001$), it was decided to conduct the planned comparative analyses using the non-parametric, rank-sum Kruskal-Wallis³ H test, which

³ The Kruskal-Wallis H -test is a rank-sum test used to compare the results obtained within $k \geq 2$ independent samples (Ferguson and Takane, 2003, pp. 463-465).

is characterised by the robustness of the equality perturbation of the compared groups of subjects.

Table 2 and the summary below present the results of the Kruskal-Wallis *H* test, which are the result of intergroup comparisons according to the intensity of individual Big Five characteristics in the area of self-efficacy. Table 3, on the other hand, presents data on the mean ranks assigned to each of the distinguished groups - these make it possible to determine whether the distinguished groups differ in the level of this variable.

Table 2. Kruskal-Wallis *H*-test scores - comparisons between groups of teachers distinguished by levels of neuroticism, extraversion, openness to experience, agreeableness and conscientiousness in relation to self-efficacy

	Chi-square	df	Asymptotic significance
Neuroticism	71,754	2	,000
Extraversion	22,008	2	,000
Openness to experience	37,042	2	,000
Agreeableness	17,746	2	,000
Conscientiousness	10,273	2	,006

Source: own research.

The results of the *H* test were as follows:

1. Neuroticism - $\chi^2 = 71.754$; $p < 0.001$ ($p = 0.000$).
2. Extraversion - $\chi^2 = 22.008$; $p < 0.001$ ($p = 0.000$).
3. Openness to experience - $\chi^2 = 37.042$; $p < 0.001$ ($p = 0.000$).
4. Agreeableness - $\chi^2 = 17.746$; $p < 0.001$ ($p = 0.000$).
5. Conscientiousness - $\chi^2 = 10.273$; $p < 0.01$ ($p = 0.006$).

Table 3. Mean ranks assigned to surveyed teacher candidates (by group distinguished by the intensity of the Big Five traits) within the level of self-efficacy

Neuroticism	Frequency	Average rank
Low score (1-4 sten)	73	200,68
Average score (5-6 sten)	145	137,74
High score (7-10 sten)	65	85,59
Total	283	
Extraversion	Frequency	Average rank
Low score (1-4 sten)	21	119,00
Average score (5-6 sten)	101	115,79
High score (7-10 sten)	161	161,44
Total	283	

Openness to experience	Frequency	Average rank
Low score (1-4 sten)	33	70,21
Average score (5-6 sten)	103	135,68
High score (7-10 sten)	147	162,75
Total	283	
Agreeableness	Frequency	Average rank
Low score (1-4 sten)	29	100,57
Average score (5-6 sten)	74	123,06
High score (7-10 sten)	180	156,46
Total	283	
Conscientiousness	Frequency	Average rank
Low score (1-4 sten)	27	105,59
Average score (5-6 sten)	74	129,91
High score (7-10 sten)	182	152,32
Total	283	

Source: own research.

The comparative analyses carried out - the results of the *H* test - showed that there were statistically significant differences in the level of self-efficacy between the groups of subjects distinguished by the intensity of each personality trait. Analysis of the mean ranks assigned to each group (Table 3) allows us to conclude that higher scores were obtained by people with low levels of neuroticism (who can be described as emotionally stable/balanced), and high levels of the other four personality traits, i.e. extrovert, openness to experience, agreeableness and conscientiousness. It should be emphasised that the high level of self-efficacy went hand in hand with such an intensity of the Big Five traits that is fully compatible with the aforementioned personality pattern that is prevalent in the pedagogical debate on teachers - an undoubtedly important argument in favour of its relevance and further exploration of the issue.

However, as three groups were compared in each of the cases described above, making it impossible to determine between which of the groups the statistically significant differences in self-efficacy detected by the *H*-test occurred, additional analyses were planned to explore this issue further. To this end, a series of comparisons was carried out for each of the Big Five traits, using the non-parametric Mann-Whitney *U* test⁴, in which

⁴ A rank-sum test for comparing results from $k = 2$ independent samples (Ferguson and Takane, 2003, p. 452).

two groups were compared each time - those scoring low on a given scale of the NEO-FFI Inventory and those scoring high on it. The assumption was made that it will be most illustrative to show possible differences between groups located at the extreme poles of the analysed personality trait dimensions. A summary of the results of the analyses conducted using the Mann-Whitney *U* test, which are discussed below, is presented in Table 4.

Table 4. Mann-Whitney *U*-test scores - comparison of self-efficacy scores of teachers who scored low and high on the five scales of the NEO-FFI Inventory

	Self-efficacy
Neuroticism (low score vs. high score)	
Mann-Whitney U test	567,000
Wilcoxon W	2712,000
Z	-7,831
Asymptotic significance (two-sided)	,000
Extraversion (low score vs. high score)	
Mann-Whitney U test	1151,500
Wilcoxon W	1382,500
Z	-2,438
Asymptotic significance (two-sided)	,015
Openness to experience (low score vs. high score)	
Mann-Whitney U test	934,500
Wilcoxon W	1495,500
Z	-5,632
Asymptotic significance (two-sided)	,000
Agreeableness (low score vs. high score)	
Mann-Whitney U test	1594,500
Wilcoxon W	2029,500
Z	-3,429
Asymptotic significance (two-sided)	,001
Conscientiousness (low score vs. high score)	
Mann-Whitney U test	1651,500
Wilcoxon W	2029,500
Z	-2,804
Asymptotic significance (two-sided)	,005

Source: own research.

The results of the intergroup comparisons conducted using the Mann-Whitney *U* test, presented in Table 4, provided data proving that, in

each of the cases analysed, the differences previously detected (through the use of the Kruskal-Wallis H test) were statistically significant in relation to all variables analysed without exception, as measured by the NEO-FFI Inventory.

In the case of the first of the Big Five personality traits, namely neuroticism, we found, namely, that teachers who scored low (specific to emotional stability, extremely important from the perspective of effective school work; cf. Kwiatkowski, S. T., 2018, pp. 193-196) were characterised by a significantly higher intensity of self-efficacy than teachers who scored high on this scale: $U = 567.000$; $p < 0.001$ ($p = 0.000$).

On the other hand, the analyses taking into account low and high levels of extraversion showed that - according to the direction determined by the mean ranks presented in Table 3 - teachers who obtained high scores (characteristic of extraversion, fundamental from the point of view of working in a group of social professions, of which the teaching profession is directly a flagship example; cf. Kwiatkowski, S. T., 2018, pp. 196-200) were characterised by a significantly higher intensity of self-efficacy than teachers who obtained low scores on this scale (specific to introversion): $U = 1151.500$; $p < 0.001$ ($p = 0.015$). Analogous results, both in terms of the statistical significance of the results obtained and the dominance of the group of respondents scoring high, were produced by comparative analyses relating to the other three Big Five traits. In the case of openness to experience (necessary from the perspective of readiness to engage in new activities or to introduce changes to existing patterns of thinking and doing things so that they become more in line with the changing realities of work; cf. Kwiatkowski, S. T., 2018, pp. 200-203), the result was as follows: $U = 934.500$; $p < 0.001$ ($p = 0.000$). In terms of agreeableness (extremely important in the process of building a positive atmosphere in the school, with particular emphasis on its emotional climate; cf. Kwiatkowski, S. T., 2018, pp. 203-209), the result was: $U = 1594.500$; $p < 0.01$ ($p = 0.001$), and with regard to conscientiousness (conditioning the dutifulness and sense of competence so important in the teaching profession; cf. Kwiatkowski, S. T., 2018, pp. 209-211): $U = 1651.500$; $p < 0.01$ ($p = 0.005$)⁵.

⁵ It should be noted that also the analyses in which a comparison of the level of self-efficacy of low and high scorers on the individual scales of the NEO-FFI Inventory was made using the Kruskal-Wallis H test in each of the analysed yielded analogous, statistically significant results: a) neuroticism (low level dominance): $\chi^2 = 61.320$; $p < 0.001$ ($p = 0.000$), (b) extraversion (high-level dominance): $\chi^2 = 5.946$; $p < 0.05$ ($p = 0.015$), (c) openness to experience (high-level dominance): $\chi^2 = 31.717$; $p < 0.001$ ($p = 0.000$), (d) agreeableness (high-level

From the results presented above, it is difficult to overlook that the exemplary, from the point of view of the teacher's work, intensity of each of the personality traits included by P. T. Costa and R. R. McCrae in the Five-Factor Theory is statistically significantly associated with a higher level of self-efficacy, which is desirable in everyday school work. In other words, the more a teacher's personality fits into this matrix, the higher the level of self-efficacy he or she possesses, which is bound to have an impact - both directly and indirectly - on the quality and effectiveness of his or her daily work and his or her achievements in the broader sense.

Conclusion

The considerations presented in this article, as well as the empirical analyses that elaborate and - in a particular way - confirm the theses contained therein, can be treated, as previously indicated, as a contribution to the discussion included in the broader discourse on the contemporary teacher. Awareness of the important and difficult to overestimate role played by this unique professional group in the lives of children and young people and - in a broader perspective - in the functioning of society as a whole, means that any data on the potential determinants of their effectiveness in general should be treated with the utmost attention and - if possible - taken into account in plans for possible reforms of the system of their education and recruitment to the profession. No one needs to be convinced about the importance of teachers' personalities in their work. However, it is important that this knowledge, based on the results of empirical analysis and at the same time constituting a kind of emanation of the theoretical area, is reflected in the *strictly* practical dimension, taking the form of specific changes in the current system and the implementation of activities aimed at its proper application. Otherwise, the debate in this area will never go beyond the realm of conjecture, speculation and proposals, without resulting in the introduction of tangible systemic solutions - solutions that could, among other things, contribute to strengthening the generally understood potential of teachers' self-efficacy, which would certainly translate into benefits for all participants in the educational process and, in a broader perspective, for contemporary societies as a whole.

dominance): $\chi^2 = 11.757$; $p < 0.01$ ($p = 0.001$), e) conscientiousness (high-level dominance): $\chi^2 = 7.863$; $p < 0.01$ ($p = 0.005$).

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