PERSONALITY VARIABLES IN RELATION TO THE EFFECT OF FEEDBACK ON THE EFFECT OF OVERCONFIDENCE

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Abstract

This research examined which personality variables potentially moderated the effect of feedback on the Overconfidence effect. Research sample consisted of Slovak teachers (n = 223) from across school levels, who were randomly allocated into one of the three groups, out of which two were experimental and one was control. Each group of participants filled in three personality questionnaires, the Reading Literacy Test, and questions on the Overconfidence effect. The first experimental group was given a real feedback on their achieved performance, the second experimental group was given an inaccurate feedback and the control group did not receive any feedback. It was pointed out that despite high mutual correlation between chosen personality variables, no relation was demonstrated between the Overconfidence effect and optimism, neuroticism, or participant's self-evaluation. The results show that the impact of real feedback on the Overestimation effect depends on the level of neuroticism. Results suggested that the type of feedback on the Overconfidence effect is not moderated by the level of optimism. At the same time, the impact of real feedback on the Overconfidence effect is partially moderated by the level of self-evaluation and the impact of inaccurate feedback on the Overconfidence effect is not moderated by the level of self-evaluation.

Keywords: *moderation analysis, overconfidence effect, effect of experience, personality variables*

Introduction

At present, the Overconfidence effect is considered to be researched and confirmed by many scientists' mistake that is present in various target groups (Gilovich et al., 2002; Lichtenstein et al., 1982; McGraw et al., 2004; Russo & Schoemaker, 1992; Shiller, 2005). However, the relationship of Overconfidence effect to personality variables is not so represented in the literature that it can be explicitly stated that certain personality variables contribute more to the creation of Overconfidence effect and others less so. Many studies provide conflicting findings and therefore it is not clear whether and what factors contribute to the increase of individual Overconfidence effect constructs. Zaidi and Tauni (2012) found that the level of education achieved, and the age of the participant are not the moderators of self-overestimation (OE). Their research showed that self-revaluation itself is not affected by the developmental stage in which the participant is. On the other hand, the research of Pan and Statnam (2012) contradicts the research of Zaidi and Tauni (2012), as Pan and Statnam (2012) pointed out that OE also increases with age. Pan and Statnam (2012) also noted gender differences, finding that women are less confident than men and men are significantly more confident than women. Furthermore, Zaidi and Tauni (2012) followed the relationship of OE with personality factors from the Big Five model. They demonstrated a positive relationship between conscientiousness, friendliness, and extraversion in relation to OE and a negative relationship between neuroticism and OE. Pallier et al. (2002) demonstrated the relationship between self-overestimation and participant proactivity, while the research also monitored extraversion or

598

self-monitoring and at the same time demonstrated the relationship between the quality of short-term memory and self-overestimation. Research by Lichtenstein and Fischoff (1977) did not show a relationship between self-overestimation and intelligence, as confirmed by research by Chabris et al. (2006), who did not find a singular relationship between self-overestimation and participant performance in a nonverbal intelligence test (Raven's progressive matrices). Due to the contradictory research findings dealing with the relationship between personality and Overconfidence effect, we decided to include in our research personality questionnaires that can potentially affect the Overconfidence effect, and the reasons for their selection and their individual characteristics will be described in more detail in the following chapter and we will focus on clarifying whether expertise plays an important role in Overconfidence effect. Many research studies such as Whitlestone (2012), Maratolli and Richardson (1998), Lichtenstein and Fischhoff (1977), Overconfidence effect on (1981), McGraw et al. (2004) point out that experts as well as laymen are overconfident. Some research studies (Lichtenstein et al.1982; Russo & Schoemaker, 1992) even point out that experts often think of themselves as better than they really are and at the same time as better than their counterparts. The above research (Lichtenstein et al., 1982; Russo & Schoemaker, 1992) also shows that Overconfidence effect is often more present in some constructs by experts than in laymen, such as e.g., in the case of the CP construct (according to Lichtenstein et al., 1982). This is one of the reasons why McKenzie et al. (2008) point out that we should take into account the fact that these experts may be subject to the effect of excessive self-confidence when listening to expert statements. Kruger and Dunning (1999, in Study 2) have also addressed the issue of self-overestimation in relation to a.) Competence / incompetence; b.) feedback as a form of debiasing (Kruger & Dunning, 1999; in Study 3), following students at Cornell University. They found that the less competent people were, the more they overestimated their skills and knowledge. Conversely, people who are more competent compared to them (and their results confirm their competence) tend to underestimate their ability to change.

Research Problem

Overconfidence in the role of the teacher is mainly associated with misperceptions of oneself, and it is therefore important that teachers are able to correctly assess their abilities. Many studies (Lichtenstein & Fischoff, 1977; Pallier et al., 2002; Pan & Statnam, 2012) have shown that if feedback is provided effectively, an individual's perception can change. The aim of this study was therefore to find out how personality variables mitigate the effect of feedback on the effect of overconfidence.

Research Focus

The study was focused on finding the relationship between Overconfidence effect and personality variables that can potentially affect the effect of feedback on The Overconfidence effect. Given that many studies provide different findings regarding the relationship between personality variables in relation to The Overconfidence effect (see Lichtenstein & Fischoff, 1977; Pallier et al., 2002; Pan & Statnam, 2012; Zaidi & Tauni, 2012) we decided to include in the research selected personality variables which, based on the studied literature, we believe could have a potential connection with the Overconfidence effect, specifically with its OE and OPE constructs.

Robert Krause. Personality variables in relation to the effect of feedback on the effect of overconfidence

PROBLEMS
OF EDUCATION
IN THE 21st CENTURY
Vol. 79, No. 4, 2021

599

Research Aim and Research Questions

The aim of the research was to find out which personality variables moderate the effect of feedback in removing the overconfidence effect.

In the theoretical basis of the work, various research findings dealing with The Overconfidence effect and Feedback were presented (see Chabris et al., 2006; DeNisi & Kluger, 1996; Fajfar et al., 2012; Krembs & McLagan, 1998; Lichtenstein & Fischoff, 1977; Pallier et al., 2002; Pan & Statnam 2012; Shepperd et al. 2005; Wiliam, 2011; Zaidi & Tauni, 2012). On the basis of the mentioned above, the following research questions were formulated:

RQ_1: Are the effects of feedback on OPE moderated by personality variables?
RQ_2: Are the effects of feedback on OE moderated by personality variables?

Research Methodology

General Background

This study was part of the larger research project APVV-0361-12 taking place at the Slovak Academy of Sciences with the title "Decision making of professionals: Processual, personality and social aspects", which focused on different ways of reducing the overconfidence effect. To be able to answer the research question about causal relation of feedback on OE and OPE, experimental methodology with within-subjects research design was chosen, and the study was conducted using online platform Qualtrics.com. In the first step the participants were asked to fill in personality questionnaires and then estimate their skills and performance in Reading Literacy Test. Subsequently, they completed the Reading Literacy Test and after that again estimated their skills and performance. One experimental group received real feedback, the other experimental group received inaccurate feedback, and the control group was without. The data were analysed using Statistical Package for the Social Sciences (SPSS), version 20.

Sample

The research sample ($n = 223$) aged 24-69 years ($M = 45.48$, $SD = 10.13$) was formed by teachers from all over Slovakia, who were selected for the research using purposive sampling method. The sample volume was meant to be the highest possible to achieve sufficient statistical power. The final sample came from nine out of 14 contacted schools, which were found in the database of National Institute for Certified Educational Measurement to be previously involved in research cooperation. The sample consisted of teachers who teach in the first ($n = 38$) or second stage ($n = 82$) in primary schools, and also of teachers from secondary vocational schools ($n = 53$), grammar schools ($n = 42$), or universities ($n = 8$). The research involved teachers with qualifications for various subjects. Teachers participated in the research voluntarily, while some ($n = 110$) were also rewarded with a gift voucher for participating in the research. Participating teachers filled out the test battery in the presence of the researcher at school, while some individual participants partook the experiment from home.

Instrument and Procedures

Overestimation effect (OE)

In the question of detecting OE, the individual's judgment of his performance with his objective and real performance was compared. The participant's task was to mark the estimate

of correct answers on a blank line (1-10). The line was 10 cm long and thus allowed us to accurately capture the participant's performance estimate, so that during the evaluation we measured with the ruler to which number the individual was assigned. Then, the effect of overconfidence was calculated as an estimate of the number of correct responses (marked on the line) minus the actual score achieved (obtained from RLT), with higher scores indicating that the participant was overestimated and lower (negative) scores indicating that the participant was underestimated. *OE* and *OPE* were assessed in such a way that the participant answered the questions before and also after completing the RLT. The impact of the experience on the Overconfidence effect was tested by comparing the participant's estimate before completing the RLT with the estimate after completing.

Overplacement effect (OPE)

When asked about the *OPE*, it was monitored how an individual evaluated their knowledge and skills compared to other participants, while measuring it by monitoring the evaluation of a participant's abilities in the Reading Literacy Test compared to other participants. OPE was measured before and after completing the test, calculating it as an estimate before minus actual performance. The measurement of *OPE* after the test only served to evaluate the effect of the experience.

Levy's Optimism Pessimism Scale (LOPS)

Life Orientation Test-Revised from Scheiera et.al. (1994) is used to measure optimism, containing 10 items, of which 6 record optimism (of which 3 are reverse coded) and 4 additional items that are not evaluated. This study used a version of the scale edited and translated by Fick (2000). The participant's task is to indicate the degree of his/ her agreement or disagreement with the given statement on a 5-point scale. The basic psychometric analysis in the research (Krause, 2017) showed that the questionnaire has a high level of internal consistency ($\alpha = .855$, $n = 223$) and all its items meet the criteria for correlation with the rest of the questionnaire (corrected item - total correlation).

Rosenberg Self - Esteem Scale (RSES)

Rosenberg Self - Esteem Scale is a self-assessment scale used to measure an individual's general self-assessment. It consists of 10 declarative sentences, half of which are formulated positively, and half are negative (which are subsequently recoded), while the individual expresses the degree of his agreement or disagreement with the statement on a 4-point scale. A high score indicates high self-assessment (the individual has a high respect for himself and can also recognize his mistakes) and a low score leads to low self-assessment (Halama & Bieščad, 2006). Based on research analyses (Krause, 2017), we also decided to use the Rosenberg self-esteem scale, which we described above. The basic psychometric analysis showed that the questionnaire has a high level of internal consistency ($\alpha = .807$, $n = 223$) and all its items meet the criteria for correlation with the rest of the questionnaire (corrected item - total correlation).

Big Five

Based on the results of the research (Krause, 2017), we decided to include only items from the factor neuroticism, which proved to be most correlated with Overconfidence effect. The basic psychometric analysis showed that the questionnaire has a sufficient level of internal consistency ($\alpha = .683$, $n = 223$) and all its items meet the criteria for correlation with the rest of the questionnaire (corrected item - total correlation).

Robert Krause. Personality variables in relation to the effect of feedback on the effect of overconfidence

PROBLEMS
OF EDUCATION
IN THE 21st CENTURY
Vol. 79, No. 4, 2021

601

Procedures

All participants in each group filled in 3 personality questionnaires, which together consisted of 32 items and were included in the main research based on the results (Krause, 2017), which were questionnaires, resp. items from the questionnaires that proved to be the most correlated in relation to the effect of overconfidence. Specifically, it was the Rosenberg self-assessment scale, the LOPS scale and the Neuroticism factor from the Big Five personality questionnaire. After completing the personal questionnaires, all participants started filling in the questions identifying the Overconfidence effect, specifically its two constructs – *Overestimation effect (OE)* and

Overplacement effect (OPE)

In the question of the *Overestimation effect*, the participant's task was to estimate how many answers from the next 10 tasks he would have correctly. We found out the *overplacement effect* so that the participant's task was to estimate where he thought he would be placed in terms of the number of correct answers and was estimated on a scale of 1-100 (1 = best placement, 100 = worst placement). After answering the questions on *OE* and *OPE*, participants from all 3 groups moved on to completing the first part of the Reading Literacy Test, which consisted of 10 questions related to what the participants read. After reading and then answering all the questions, the participants again filled in the questions on *OE* and *OPE*. After answering the questions, the participants in 1 experimental group (group with real feedback, hereinafter RF) were shown the real result of the number of correct answers. After finding out their result, questions asking for *OE* and *OPE* again followed. The second experimental group (inaccurate feedback group, IF) was also shown the result of the number of correct answers, which, however, was pre-programmed in Qualtrics to add 2 correct answers to the participants who achieve the number of correct answers on a scale of 0-6 to *OE* estimate after completing the test, i.e., e.g., in the case of a participant who, after passing the test, estimated that he would have 3 correct answers (when in fact he had 0-6 correct answers), then the program showed him that he had 5 correct answers. For participants who achieved the number of correct answers on a scale of 7-10, the program deducted 2 points from the *OE* estimate after passing the test, i.e., e.g., in the case of a participant with 7 really correct answers and his estimate e.g., 5 correct answers the program showed him that he had 3 correct answers. After finding out their result, questions asking for *OE* and *OPE* again followed. In the control group, the participants did not receive any feedback, they only filled in questions on *OE* and *OPE*. Subsequently, participants from all three groups filled in the remaining 10 questions from the Reading Literacy Test. After completion of testing, participants from 2nd experimental group (group with inaccurate feedback) were informed that they did not receive an exact feedback due to scientific study of the issue, while the program also showed them their real scores from both samples from RLT.

Data Analysis

The methods of verification of research questions are listed in Table 1.
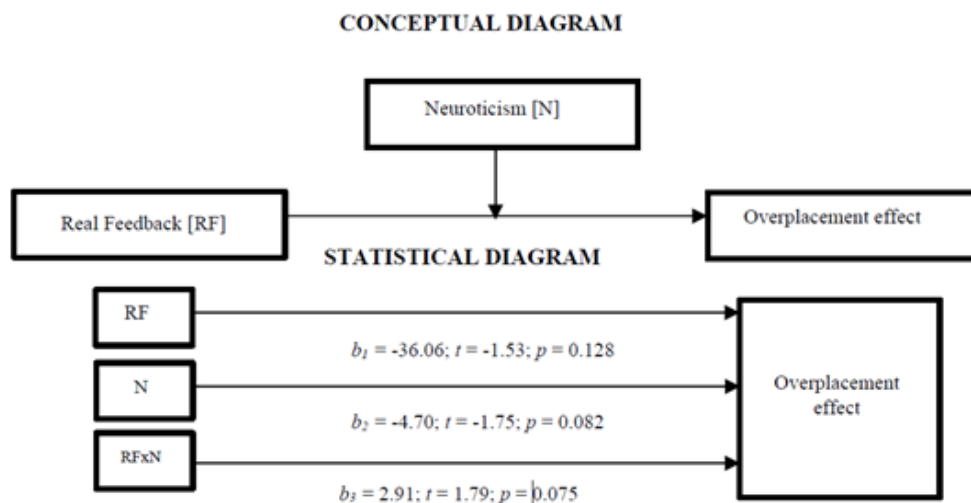
602

Table 1
Methods of Answering the Research Questions

RQ$_1$: Are the effects of feedback on OPE moderated by personality variables?	In a series of linear regression analysis, the effect of the interaction of feedback and the level of various personality variables on OPE was evaluated. Presence of the moderating effect would be suggested by statistically significant interaction term. Also, the conditional effects of feedback on OPE in three subgroups according to the level (low, medium, high) of relevant personality variables (neuroticism or self-evaluation) were calculated.
RQ$_2$: Are the effects of feedback on OE moderated by personality variables?	In a series of linear regression analysis, the effect of the interaction of feedback and the level of personality variables on OE was evaluated. Presence of the moderating effect would be suggested by statistically significant interaction term. Also, the conditional effects of feedback on OE in three subgroups according to the level (low, medium, high) of the relevant personality variables (neuroticism or self-evaluation) were calculated. Presence of the moderating effect would be suggested by statistically significant interaction term.

Research Results

Within RQ$_1$ in which we monitored whether *the effects of feedback on OPE are moderated by personality variables*. In the search for an answer to RQ$_1$, the first step verified whether neuroticism moderates the effect of RF on OPE (Figure 1). Marginally significant results were found.
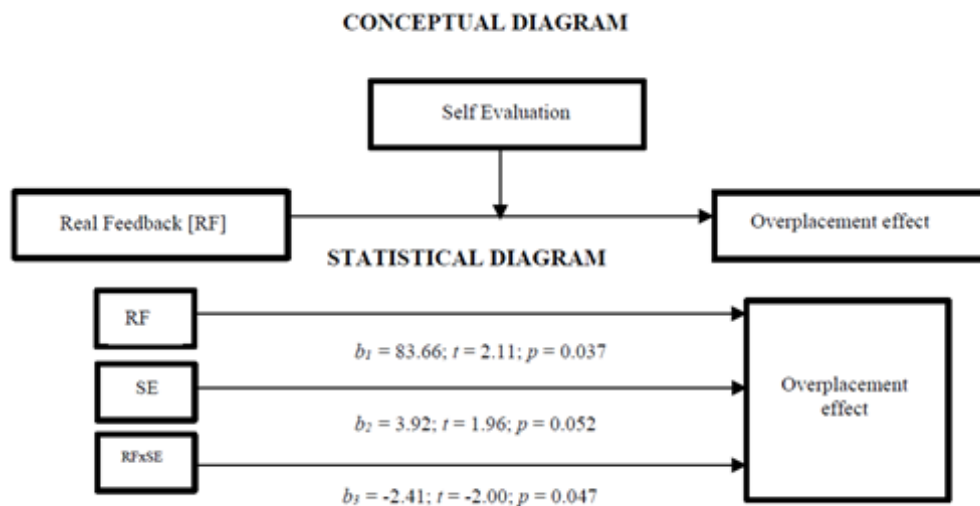
Figure 1
Neuroticism as a Moderator of the Influence of RF on OPE

CONCEPTUAL DIAGRAM

Neuroticism [N]

Real Feedback [RF] → Overplacement effect

STATISTICAL DIAGRAM

RF → Overplacement effect

$b_1 = -36.06; t = -1.53; p = 0.128$

N

$b_2 = -4.70; t = -1.75; p = 0.082$

RFxN

$b_3 = 2.91; t = 1.79; p = 0.075$

Conditional effects	Neuroticism	Effect	*t*	*p*	95% *CI*
	Low	-5.06	-0.64	.523	[-20.68; 10.57]
	Medium	5.01	0.907	.366	[-5.90; 15.92]
	High	15.08	1.92	.056	[-0.40; 30.56]

Robert Krause. Personality variables in relation to the effect of feedback on the effect of overconfidence

PROBLEMS
OF EDUCATION
IN THE 21st CENTURY
Vol. 79, No. 4, 2021

603

From figure 1 it is visible that in humans with low and medium neuroticism, RF does not affect *OPE*, but increases *OPE* in humans with high neuroticism. People with high neuroticism tended to be underestimated in the control group, while they began to be overestimated after RF. The interaction of the influence of real feedback and neuroticism is marginally significant. However, the model explains only 3% of the *OPE* variance ($p <.001$). In further analysis, we found that the effects of IF on *OPE* and TF on *OPE* are not moderated by neuroticism. It was also found (RQ_1) that the effects of RF, IF and TF on *OPE* are not moderated by the level of optimism. We further verified RQ_5 by observing whether the self-assessment rate moderates the effect of RF on *OPE* (Figure 2).
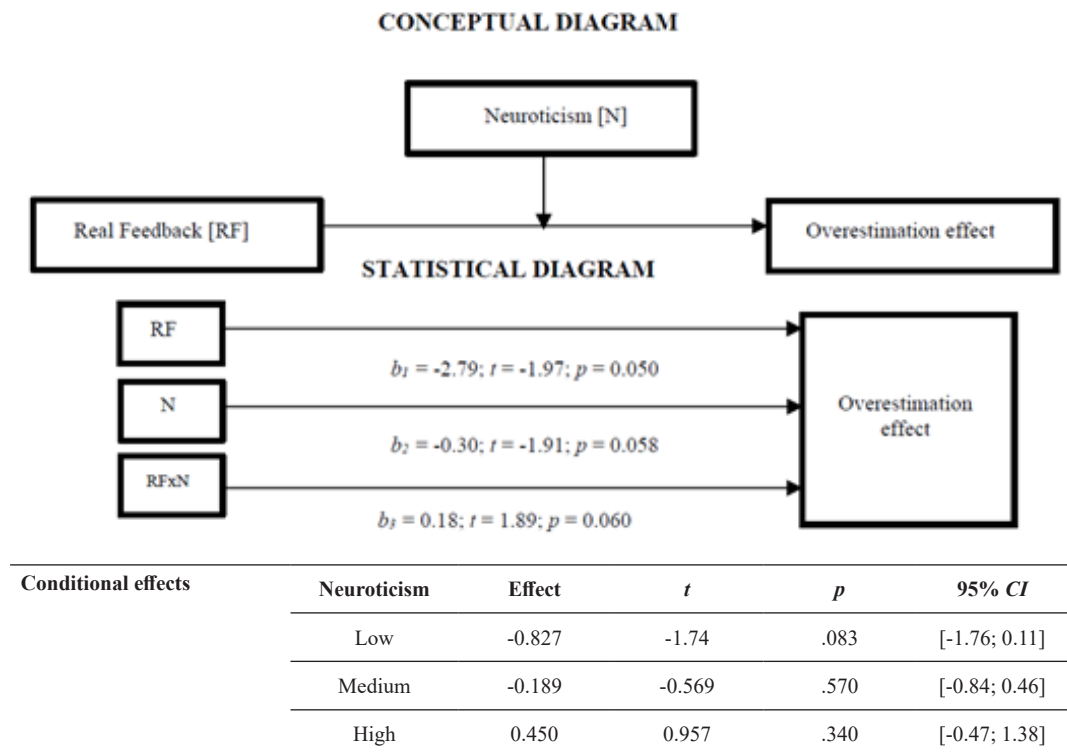
Figure 2
Self-assessment as a Moderator of the Influence of RF on OPE

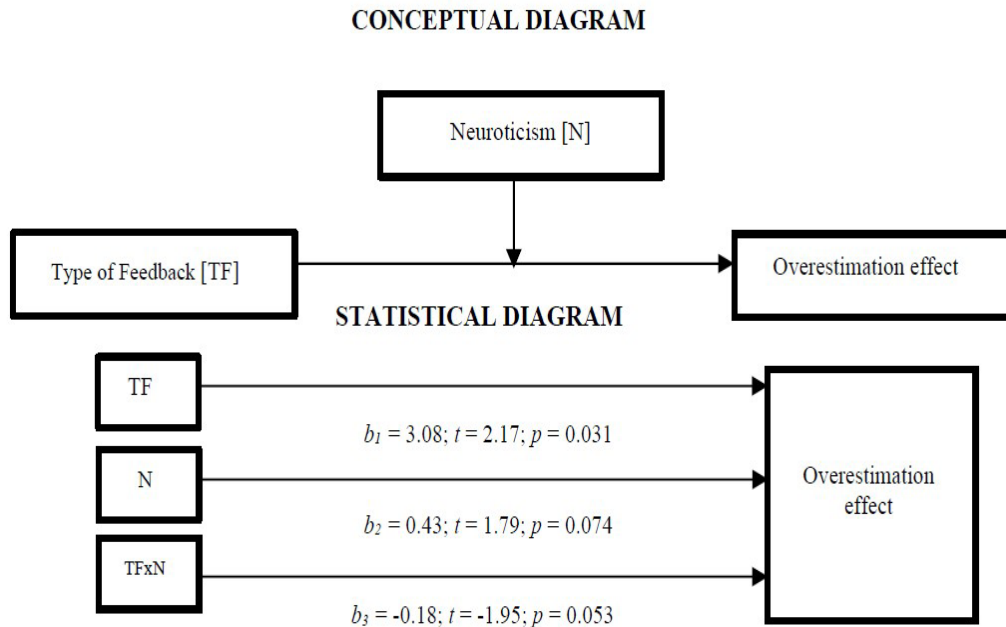| Conditional effects	Self-Evaluation	Effect	t	p	95% CI
	Low	16.32	2.08	.039	[0.83; 31.81]
	Medium	5.15	0.938	.350	[-5.70; 16.01]
	High	-6.01	-0.76	.444	[-21.49; 9.47]

From figure 2 it is visible that in humans with low self-assessment, RF significantly increased *OPE*, in humans with medium and high levels there were insignificant effects. People with low self-assessment were underestimated in the control group, while after RF they began to be overestimated. The effects of real feedback, self-assessment, as well as their interactions on *OE* were significant. Thus, self-assessment is a moderator of the RF effect on *OE*. The model explained 4% variance of *OPE* ($p <.001$). Subsequently, we found that the effects of IF and TF on *OPE* are not moderated by participant self-assessment. In further analysis, we verified $_2$, and thus *whether the effects of feedback on OE are moderated by personality variables*. In the first step, we verified whether neuroticism moderates the effect of RF on *OE* (Figure 3). It was found marginally significant results.

Figure 3
Neuroticism as a Moderator of the Influence of RF on OE

Conditional effects	Neuroticism	Effect	t	p	95% CI
	Low	-0.827	-1.74	.083	[-1.76; 0.11]
	Medium	-0.189	-0.569	.570	[-0.84; 0.46]
	High	0.450	0.957	.340	[-0.47; 1.38]

From figure 3 it is visible that the effect of RF ranged from mildly negative in humans with low level of neuroticism, to negligible in humans with medium level of neuroticism, to mildly positive in humans with high level of neuroticism. The effects of RF, neuroticism, as well as their interactions on *OE* were significant or marginally significant. The model explained 3% *OE* variance ($p < .001$). People with low neuroticism were overestimated in the control group (CG) and underestimated after RF. People with medium level of neuroticism were adequately evaluated in CG and were slightly underestimated after RF. People with high neuroticism were underestimated in CG and were adequately evaluated after RF. In further analysis, we found that the effect of IF on *OE* is not moderated by neuroticism. It was subsequently verified whether neuroticism moderates the effect of TF on *OE* (Figure 4). Marginally significant results were found.

Robert Krause. Personality variables in relation to the effect of feedback on the effect of overconfidence

PROBLEMS
OF EDUCATION
IN THE 21st CENTURY
Vol. 79, No. 4, 2021

605

Figure 4
Neuroticism as a Moderator of the Influence of TF on OE

Conditional effects	Neuroticism	Effect	t	p	95% *CI*
	Low	1.077	2.21	.029	[0.11; 2.04]
	Medium	0.404	1.175	.242	[-0.27; 1.08]
	High	-0.269	-0.551	.582	[-1.23; 0.69]

Figure 4 shows that in humans with low neuroticism, IF led to significantly higher *OE* than RF, but in medium and highly neurotic participants, the effect of TF was not sufficiently manifested (a slight increase in the first case and a slight decrease in the second case). The effects of TF, neuroticism, as well as their interactions on *OE* were significant or marginally significant. The model explained 3% *OE* variance ($p < .001$). Participants with low level of neuroticism were slightly underestimated after RF and significantly overestimated after TF. For the remaining groups, both values were relatively close to an adequate estimate. In further analysis in relation to RQ_2, we have shown that the effects of RF, IF, TF on *OE* are not moderated by the level of optimism. We further verified RQ_2 by observing whether the self-assessment rate moderates the effect of RF on *OE* (Figure 5). We found marginally significant results.

606

Figure 5
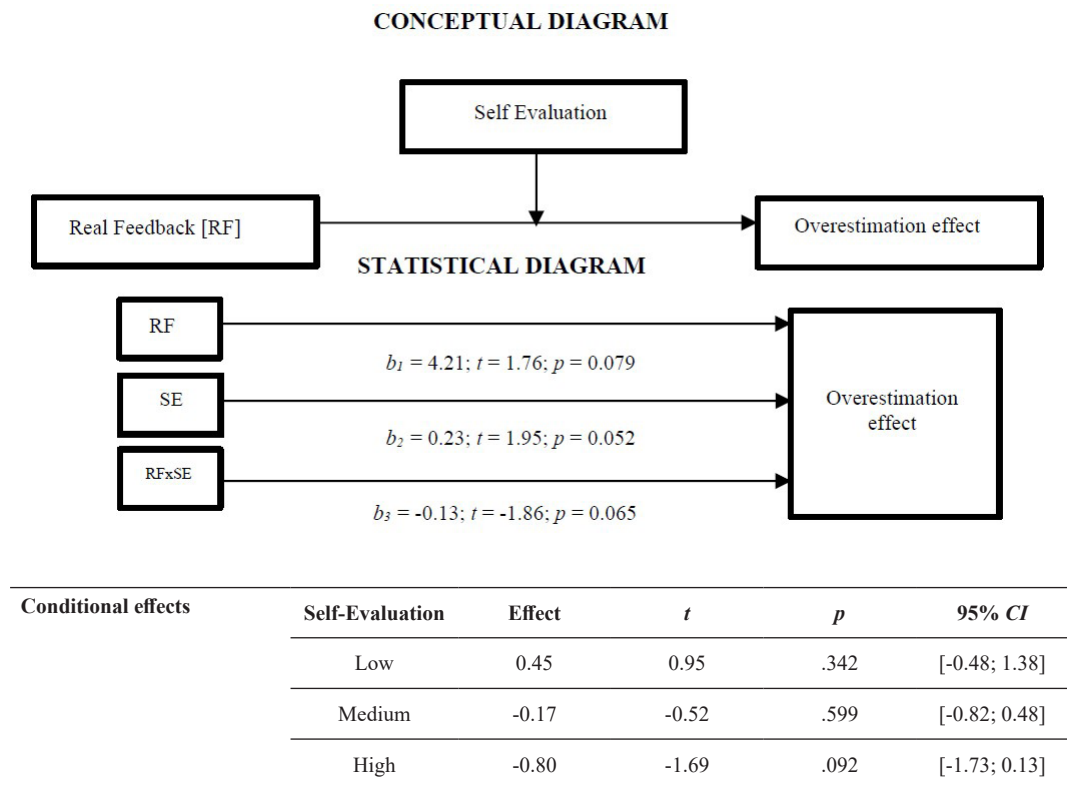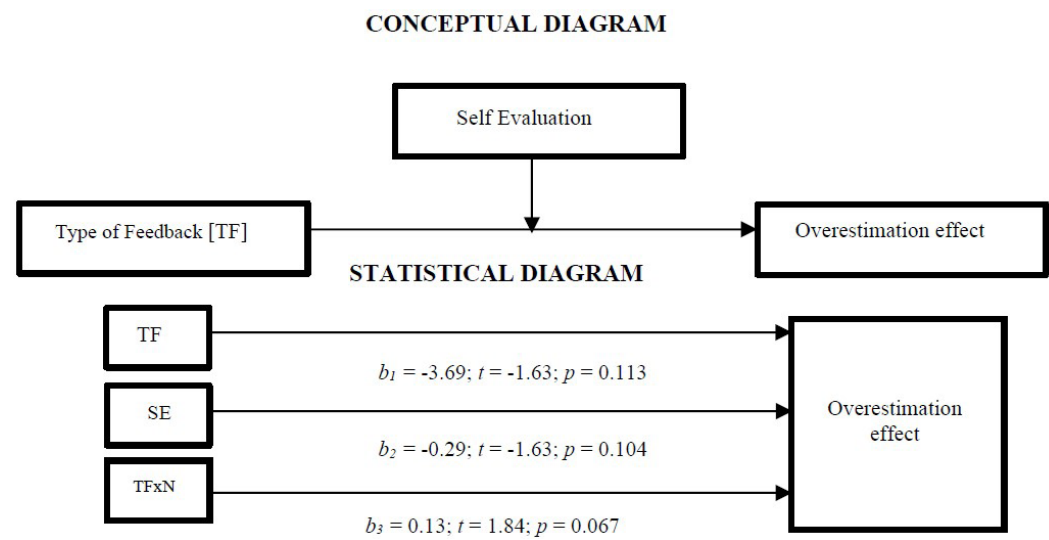
Self-assessment as a Moderator of the Influence of RF on OE

CONCEPTUAL DIAGRAM

STATISTICAL DIAGRAM

$b_1 = 4.21; t = 1.76; p = 0.079$

$b_2 = 0.23; t = 1.95; p = 0.052$

$b_3 = -0.13; t = -1.86; p = 0.065$

Conditional effects	Self-Evaluation	Effect	*t*	*p*	95% *CI*
	Low	0.45	0.95	.342	[-0.48; 1.38]
	Medium	-0.17	-0.52	.599	[-0.82; 0.48]
	High	-0.80	-1.69	.092	[-1.73; 0.13]

Figure 5 shows that RF insignificantly increased *OE* in humans with low self-assessment and insignificantly decreased *OE* in humans with medium and high self- assessment, with partial moderation (marginally significant moderation as well as the values of the individual effects). The group with low self-assessment was slightly underestimated without feedback and slightly overestimated after RF. The group with a medium self-assessment was slightly overestimated without feedback and also after RF. The group with high self-assessment was significantly overestimated without feedback and was slightly underestimated after RF. The model explained 3% *OE* variance (*p* <.001). The results also indicated that the influence of IF on *OE* is not moderated by the level of self-assessment. In further analysis, we verified whether the self-assessment rate moderates the effect of TF on *OE* (Figure 6). We found marginally significant results.

Figure 6
Self-assessment as a Moderator of the Influence of TF on OE

CONCEPTUAL DIAGRAM

STATISTICAL DIAGRAM

$b_1 = -3.69$; $t = -1.63$; $p = 0.113$

$b_2 = -0.29$; $t = -1.63$; $p = 0.104$

$b_3 = 0.13$; $t = 1.84$; $p = 0.067$

Conditional effects	Self -Evaluation	Effect	t	p	95% CI
	Low	-0.24	-0.50	.617	[-1.19; 0.71]
	Medium	0.39	1.14	.258	[-0.29; 1.06]
	High	1.02	2.11	.037	[0.64; 1.96]

From figure 6 it is visible that RF and IF functioned differently in humans with different levels of self-assessment, with a significant effect present in humans with high self-assessment, as with them IF resulted in significantly higher *OE* than RF. Specifically, after RF, people with high self-assessment were slightly underestimated and significantly overestimated in the group with TF. For the other subgroups, the differences were insignificant. The effects of TF, self-assessment and their interactions were marginally significant. The model explained 4% *OE* variance ($p < .001$).

Discussion

The aim of this study was to verify which personality variables can potentially moderate the effect of feedback on Overconfidence effect (RQ_1, RQ_2). Since the personality variables which were selected were the ones which proved to be the most correlated with Overconfidence effect based on the results of previous study (Krause, 2017), moderation analysis was performed. In it, selected personality variables were monitored in individual research groups. Before that, we looked at whether selected personality variables correlated with Overconfidence effect. We found that despite the high mutual correlation between selected personality variables, the relationship between Overconfidence effect and optimism or neuroticism was not demonstrated. However, it was found that the level of self-assessment correlates with *OE*, but only before passing the RLT. Results contradict what Zaidi and Tauni (2012) write, who studied the relationship of *OE* with personality factors from the Big Five model and demonstrated a negative relationship between the factor of neuroticism and *OE*. Also, our results do not confirm what Camerer and Lovallo (1999) found, who showed a relationship between Overconfidence effect and over-

608

optimism. However, in our study this did not prove to be statistically significant. After verifying the relationships between personality variables and Overconfidence effect, we monitored the potential moderating impact of personality variables when giving feedback on Overconfidence effect. Research pointed that the effect of RF on *OE* depended on the level of neuroticism. Our results showed that RF had a negative effect on people with low levels of neuroticism, i.e., their *OE* was declining, and in people with high levels of neuroticism, RF had a positive effect, i.e., their *OE* was increasing, in people with low and medium neuroticism, RF worked by reducing *OPE*, and in people with high neuroticism, RF increased *OPE*. Results indicate that although neuroticism has not been correlated with Overconfidence effect, its significance is perceptible in the influence of RF on Overconfidence effect. Based on the results of moderation analysis, we can state that the effect of RF on Overconfidence effect depends on the level of neuroticism, and it is a partial moderation. Further, it was found that the effect of IF on Overconfidence effect was not related to neuroticism. The results indicate that TF (RF, IF) acts differently on people with different levels of neuroticism, with a significant difference being present only in people with low levels of neuroticism, whereas IF has a higher *OE*. We further verified whether optimism moderates the influence of RF and IF on Overconfidence effect. Study showed that the effect of RF on Overconfidence effect was not moderated by the level of optimism. We also found that the effect of IF on the Overconfidence effect was not moderated by the level of optimism. Based on the results, we can state that TF (RF, IF) at Overconfidence effect is not moderated by the level of optimism. We subsequently verified whether the level of self-assessment moderated the influence of RF and IF on Overconfidence effect. We found that the effect of RF on *OE* was partially moderated by the level of self-assessment, as RF increased *OE* in people with low self-assessment and decreased *OE* in medium and high competent people. Furthermore, we found that the effect of RF on *OPE* was clearly moderated by the level of self-assessment, as in people with low self-assessment RF increased statistically significantly *OPE* and in people with high level of self-assessment RF decreased *OPE*. Based on the results of the moderation analysis, we can state that the effect of RF on Overconfidence effect is partially moderated by the level of self-assessment. Our results also indicated that the impact of IF on Overconfidence effect was not moderated by the level of self-assessment. The results also showed that TF worked differently in people with different levels of self-assessment, with the difference being present in people with high self-assessment in the Overconfidence effect that IF led people with high self-assessment to higher *OE* than in RF. Our results showed that the influence of personality variables is more related to TF in reducing Overconfidence effect than to Overconfidence effect itself, which also confirms the inconsistency in the literature examining the influence of personality variables on Overconfidence effect. As a limit of the study, we perceive the RLT, which many participants rated as mentally demanding on cognitive processing and experienced various ambivalent feelings when completing it, which we captured as experimenters, as participants complained that it was a test that did not reflect the level of their reading literacy, but rather the level of grammatical competence. However, this fact was mentioned right at the beginning of the research, where we stated that: *"This research is designed to determine the level of grammatical competence and some personality variables,"* but we subsequently operated with the term reading literacy, as in the adult population under reading literacy is also included the use of grammatical competence in practice. For our purposes, however, the RLT only served as a tool for measuring the level of competence. However, based on the unfinished questionnaires, we conclude that the methodology provided by NUCEM could potentially discourage the addressed participants, as it confronted them with their competence/ incompetence. In the next research testing we decide to include another methodology, resp. operationalize not only at the beginning, but also before completing the RLT, that the test will also include the determination of the level of grammatical competence, as many participants did not initially know that reading literacy includes the use of grammar knowledge in practice,

Robert Krause. Personality variables in relation to the effect of feedback on the effect of overconfidence

PROBLEMS
OF EDUCATION
IN THE 21st CENTURY
Vol. 79, No. 4, 2021

609

which was also confirmed by a research and development employee, coordinator of test creation and bank of tasks from the Slovak language and literature and reading literacy from the National Institute of Certified Measurements. Given the practical application of the collected data, we plan to make repeated measurements that could potentially clarify whether the effects themselves of reducing Overconfidence effect are generalizable and lasting.

Conclusions

Primary aim of this study was to verify which personality variables can potentially moderate the effect of feedback on Overconfidence effect. Results showed that the impact of real feedback on the Overconfidence effect is not moderated by competency. We pointed out that despite high mutual correlation between chosen personality variables, no relation was demonstrated between the Overconfidence effect and optimism, neuroticism, or participant's self-evaluation. Results showed that the impact of real feedback on the Overestimation effect depended on the level of neuroticism. Results suggested that the type of feedback on the Overconfidence effect is not moderated by the level of optimism. At the same time, we pointed out that the impact of real feedback on the Overconfidence effect is partially moderated by the level of self-evaluation and the impact of inaccurate feedback on the Overconfidence effect is not moderated by the level of self-evaluation. The work pointed out that paying increased attention to the possibilities of eliminating the ubiquitous and scientifically well-documented cognitive error of the Overconfidence effect is very important, as its presence affects social society and at the same time affects relationships between individuals. This research pointed out many aspects related to the Overconfidence effect, its presence in various groups, but also the role of personality variables that enter the debiasing process as moderator variables.

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