

Readiness for Innovative Activities Among Students of Technical Universities

Natal'ya A. Buravleva^{1*}, Sergei A. Bogomaz²

¹ Tomsk State Pedagogical University, Tomsk, Russian Federation

² Tomsk State University, Tomsk, Russian Federation

* Corresponding author. E-mail: buravljova-nata-bn@rambler.ru

ORCID ID: <https://orcid.org/0000-0001-5176-7533>, <http://orcid.org/0000-0002-8955-5621>

Abstract

Introduction. Nowadays innovations determine the success of breakthrough transformations in the country. This article examines readiness for innovative activities among student youth studying at technical universities.

Methods. The study used the following techniques: (a) the techniques by Sh. Schwartz and R. Inglehart to measure individual values; (b) the questionnaires for assessing activity self-organization and styles of responding to changes; (c) the scales for self-assessing innovative personality traits, needs for autonomy, competence and relatedness, life satisfaction, and academic motivation; (d) 'openness' scale of the Big Five questionnaire; and (e) the index of personal readiness for activities. Factor analysis and regression analysis of diagnostic results were carried out. The sample comprised 160 students of Tomsk Technical Universities.

Results. The findings identified the most significant factors influencing the manifestation of students' innovative characteristics. These include, first of all, personality values, styles of responding to changes, and openness to experience. The study of values as a significant predictor of innovative activities showed the heterogeneity of the value system of students studying at technical universities. The simultaneous manifestation of traditional values, values of survival, and the values of openness to change, self-transcendence, and self-determination is characteristic of them. Regression analysis showed that the innovative style of responding to changes is not characteristic of students.

Discussion. This study represents the first attempt to measure the main psychological characteristics that affect the manifestation of innovativeness among students of technical universities, and also the parameters of their personal readiness for innovative activities. In the context of readiness for innovative activities personal characteristics of young people are contradictory. However, there are positive tendencies towards self-development and professional improvement. The findings speak in favour of the transitivity of social reality in society and indicate the need to create the educational environment focused on personal development and innovative competencies of students.

Keywords

innovativeness, innovation activities, personality development, openness to experience, values, motivation, university students, predictor, innovativeness index, personality

Highlights

- 'Openness to experience', 'index of personal readiness for activities', and 'innovativeness index' are the main indicators of students' readiness for innovative activities.
 - The value system of young people is inconsistent as a predictor of innovation activities.
 - Students of technical universities are not fully prepared to carry out innovative activities.
 - An innovative style of responding to changes is not predominant for students when assessing their personal readiness for innovative activities.
-

For citation

Buravleva, N. A., & Bogomaz, S. A. (2020). Readiness for innovative activities among students of technical universities. *Rossiiskii psikhologicheskii zhurnal (Russian Psychological Journal)*, 17(3), 30–43. doi: 10.21702/rpj.2020.3.3

Received: June 12, 2020

Revision received: August 7, 2020

Accepted: August 10, 2020

Introduction

The near-future transition to an innovative development model is a key strategic goal of the country. The rapid pace of change, complex multidisciplinary challenges of our time focus the attention of researchers from various branches of knowledge on the issues of innovation.

For all the importance of the organizational, economic, technological components of transformations, issues related to the influence of the human factor and the socio-cultural foundations of society as a whole on the process of introducing innovations are no less significant (Lebedeva & Yasin, 2009). In this situation, social demands for higher education in terms of the quality of training specialists for professional activity in the context of the country's transition to an innovative path of development acquires special relevance. Psychological studies examining personal characteristics of young people in terms of their readiness for innovative activities are becoming fundamentally important.

In recent years, there were several studies of the specific characteristics of innovation activities and innovation behavior. They are based on the idea that readiness for activities is one of the integral characteristics of and individual as a subject of activity, a manifestation of individual personality traits that ensure the effectiveness of activity (Leont'ev, 2005; Derkach, 2004; Yuan & Woodman, 2017; Atamanova, Bogomaz, & Filippova, 2018; Buravleva, Prokhorenko, & Budakova, 2019; Perikova, Atamanova, & Bogomaz, 2020). Readiness for activities indicates, on the one hand, an individual's decision to act, and on the other, the presence of resources that ensure the implementation of such a decision (Tyklyuk, 2007; Scott & Bruce, 2017).

According to Krasnoryadtseva (2012), psychological readiness for innovation activities reflects the dynamic characteristics of the multidimensional human life world. Considering various aspects of innovation behavior, Klochko & Galazhinsky (2009) believe that it is carried out beyond the established attitudes and behavioral stereotypes, and its "significant psychological characteristic is the innovative potential of a person, which is understood as an integral systemic characteristic of a person, determining its ability, firstly, to generate new forms of behavior and activity... and, secondly, to provide a mode of self-development" (Klochko & Krasnoryadtseva, 2010, p. 154).

Ponukalin (2010) emphasizes that the psychology of innovative activities is focused on personality traits of an individual, the subject of innovative activity. The aims of training a professional as an innovative person follow from the basic structures of the model of an innovator's personality.

The study of psychological characteristics of student youth that are related to their readiness for innovative activities is necessary to expand approaches to predicting the success of transformations in the country. It may help to adequately answer many questions related to the challenges facing Russian society, to assess human capital in the innovative development of the country, and to examine socio-cultural dynamics of society. Personality traits of students of technical universities, who have to create high-tech equipment, work in the field of artificial intelligence, and carry out technical improvements are of particular interest.

Therefore, our study aims to examine readiness for innovative activities among students of technical universities and, consequently, to identify the most significant predictors of innovative activities and psychological characteristics of students in terms of their readiness for innovative activities.

Methods

The study used the following techniques:

1. Scale for Self-assessment of Innovative Personality Traits, SIPT, with the following indicators: 'creativity', 'risk taking disposition', 'orientation towards the future', 'index of innovativeness' (Lebedeva & Tatarko, 2009).
2. Styles of Responding to changes questionnaire with the following indicators: 'innovative style', 'conservative style', 'reactive style', and 'implementing style' (Bazarov & Sycheva, 2012; Kolantaevskaya, Grishina, & Bazarov, 2016).
3. Questionnaire for assessing self-organization of activities with the indicators of 'goal setting' and 'planning' (Mandrikova, 2010).
4. Life Satisfaction Scale (E. Diener; modified by D. A. Leontyev & E. N. Osin) with the indicator of 'life satisfaction' (Diener, Emmons, Larsen, & Griffin, 1985; Osin & Leontiev, 2020).
5. The Index of Personal Readiness for Activities, which is the arithmetic mean of the normative indicators of 'goal setting', 'planning', 'reflection' and 'life satisfaction' (Bogomaz, 2014).
6. The 'openness' scale of the Big Five questionnaire (Big Five Questionnaire, BFQ – G. V. Caprara, C. Barbaranelli, L. Borgogni, M. Perugini) with the indicators of 'openness to knowledge (culture)', 'openness to experience', 'openness index' (Caprara, Barbaranelli, Borgogni, & Perugini, 1993; Osin, Rasskazova, Neyaskina, Dorfman, & Aleksandrova, 2015).
7. The scale for assessing the Needs for Autonomy, Competence, and Relatedness (K. M. Sheldon, J. C. Hilpert, tested by D. A. Leont'ev) with the 'self-determination index' as the arithmetic mean of these three indicators (Sheldon & Hilpert, 2012).
8. The Academic Motivation Scale (AMS) by Vallerand, modified by T. O. Gordeeva, O. A. Sychev, & E. N. Osin, with the following indicators: 'motivation for learning', 'achievement motivation', 'self-development motivation', 'self-respect motivation', 'introjected motivation', 'external motivation', 'amotivation', 'motivation index' (Gordeeva, 2016).
9. Inglehart World Values Survey (modified by R. K. Khabibulin) with the indicators of 'traditional/rational – secular values (values of modernism)' (T/S-RV) and 'survival/self-expression values' (S/S-EV) (Khabibulin, 2015).
10. Portrait Values Questionnaire-Revised – PVQ-R (Schwartz et al., 2012, modified by K. V. Sugonyaev)

with meta-values of ‘openness’, ‘self-affirmation’, ‘maintaining’ and ‘self-determination’ (Schwartz et al., 2012; Karandashev, 2004; Schwartz et al., 2017; Sugonyaev, 2018).

Thus, in our study, we used 10 techniques to measure 26 indicators and indices.

For statistical processing of the data obtained in our study, we carried out factor and regression analysis (principal component analysis) using the Statistica and SPSS software packages.

Our empirical study involved students of the School of Non-Destructive Testing & Security, National Research Tomsk Polytechnic University and the Department of Control Systems, Tomsk State University of Control Systems and Radioelectronics (mean age = 19.0 ± 0.7 years; N = 160, girls – 32 %, boys – 68 %).

Results

In accordance with the objectives of our study, the results were subjected to factor analysis. The criteria for the analysis quality were the percentage of variance of the original correlation matrix, the number of variables, the Cattell scree test, and the number of respondents. As a result, we identified a factor structure that included 160 observations using the principal component method with Varimax rotation; the number of variables is 14; the number of factors is 5, explaining 64.5 % of the variance of the original correlation matrix. A factor loading of more than 0.40 was used as a significance criterion. Table 1 shows the results.

Table 1
 Factor analysis

<u>Indicators and indices</u>	<u>Factor 1</u>	<u>Factor 2</u>	<u>Factor 3</u>	<u>Factor 4</u>	<u>Factor 5</u>
Innovative style	0.944	0.042	0.157	0.014	0.015
Conservative style	-0.944	-0.042	-0.157	-0.014	-0.015
Innovativeness index	0.482	0.306	0.439	0.267	0.150
Index of openness	0.433	0.443	0.244	0.394	-0.101
Self-determination	-0.071	0.839	0.124	0.128	-0.205
Openness to change	0.354	0.771	0.257	0.066	0.075
Self-affirmation	0.199	0.609	-0.099	0.155	0.503

Indicators and indices	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Maintaining	-0.398	0.575	-0.082	0.455	0.039
Reactive style	-0.177	-0.087	-0.960	-0.070	0.055
Implementing style	0.177	0.087	0.960	0.070	-0.055
Traditional values	-0.103	-0.007	-0.002	0.769	0.257
Motivation index	0.182	0.138	0.020	0.747	-0.091
Index of personal readiness for activities	0.058	0.319	0.327	0.691	-0.046
Survival values	-0.011	-0.078	-0.036	0.030	0.917

The most significant factor combined *the innovative style of responding to changes* (0.944; hereinafter, factor loading is indicated in parentheses), *the index of innovativeness* (0.482), *the index of openness* (0.433), as well as *the conservative style of responding to changes* (-0.944). The leading factors of personal readiness for innovation activities are *the innovative style of responding to changes*, *the index of innovativeness*, *the index of openness*; *the conservative style of responding to changes* has a negative value.

Factor 2 combined the meta-values assessed by the Schwartz technique (modified by K. Sugonyaev): *self-determination* (0.839), *openness to change* (0.771), *self-affirmation* (0.609), *maintaining* (0.575), and *the openness index* (0.443). *Values* and *the index of openness* are significant factors in the context of students' personal readiness for innovative activities. At the same time, the values of self-determination and openness to change are of paramount importance.

For factor 3, the most significant were *the realizing style of responding to changes* (0.960), *the index of innovativeness* (0.439), and *the reactive style of responding to changes* (-0.960).

Factor 4 combined *traditional values* (0.769), *motivation* (0.747), *the index of personal readiness for activities* (0.691), and *the values of maintaining* (0.455).

For factor 5, the most significant were *the value of survival* (0.917) and *the value of self-affirmation* (0.503).

Thus, the factor analysis and factor structure showed that are *the innovative style of responding to changes*, *the index of openness*, and *the personality values* of self-determination, openness to change, self-affirmation, and maintaining are the most significant in describing innovative activities among university youth studying in technical specialties.

In addition to examining the factor structure, we carried out a regression analysis to determine the degree of determinacy of the dependent variable from predictors and the contribution of each independent variable to the variation of the dependent one. Therefore, we used direct stepwise regression analyze with inclusion. The regression analysis indicated that the leading parameters are 'openness to experience' (adjusted $R^2 = 0.567$), 'index of personal readiness for activities' (adjusted $R^2 = 0.489$) and 'index of innovativeness' (adjusted $R^2 = 0.380$). These are parameters that we considered sequentially as dependent variables.

In regression analysis, when considering the 'openness to experience' dependent variable, we observed 4 significant predictors: 'openness to change', 'index of personal readiness for activities (PRA)', 'index of personal innovativeness', 'conservative style of responding to changes'. Table 2 presents the final regression model with 4 predictors.

Table 2
Regression analysis

Indicators and indices	Beta	Std. error	B	Std. error	t (155)	p
Intercept			6.193	3.206	1.932	0.055
Openness to change	0.409	0.063	3.713	0.571	6.503	0.000
Index of personal readiness for activities, PRA	0.241	0.062	2.130	0.544	3.917	0.000
Index of personal innovativeness	0.174	0.069	1.560	0.623	2.502	0.013
Conservative style of responding to changes	-0.189	0.061	-0.255	0.082	-3.104	0.002

Note: dependent variable – *openness to change*.

The regression model turned out to be significant ($F(4, 155) = 53.0$; $p < 0.000000$), explaining 56.7 % of the variance (adjusted R^2). In this case, 'openness to experience' has an average value of the variance. The regression analysis showed that 56.7 % of the variance of the 'openness to experience' dependent variable is explained by significant predictors of the meta-value of 'openness to change' (has the highest coefficient $\beta = 0.409$), 'index of personal readiness for activities' ($\beta = 0.241$), 'index of personal innovativeness' ($\beta = 0.174$), 'conservative style of responding to changes' with a negative value ($\beta = -0.189$).

Further, we analyzed the regression model, where the 'index of personal readiness for activities' was used as the dependent variable. Table 3 presents the final regression model with 7 predictors.

<u>Indicators and indices</u>	<u>Beta</u>	<u>Std. error</u>	<u>B</u>	<u>Std. error</u>	<u>t (152)</u>	<u>p</u>
Intercept			0.506	0.357	1.418	0.158
Index of innovativeness	0.315	0.073	0.321	0.075	4.293	0.000
Traditional values	0.286	0.064	0.189	0.042	4.488	0.000
Openness to experience	0.277	0.075	0.031	0.009	3.684	0.000
Motivation index	0.146	0.065	0.030	0.013	2.243	0.026
Maintaining	0.117	0.068	0.130	0.076	1.724	0.087
Innovative style of responding to changes	-0.140	0.072	-0.021	0.011	-1.960	0.052
Survival values	-0.131	0.058	-0.099	0.044	-2.263	0.025

Note: dependent variable – index of personal readiness for activities.

The regression model turned out to be significant ($F(7, 152) = 44.7; p < 0.00000$). The regression analysis showed that 48.9% of the variance of the 'index of personal readiness for activities' is explained by the following predictors: 'index of innovativeness' ($\beta = 0.315$), 'traditional values' ($\beta = 0.286$), 'openness to experience' ($\beta = 0.277$), 'motivation index' ($\beta = 0.146$), and 'maintaining' ($\beta = 0.117$). *Personal readiness for activities* is negatively affected by individual adherence to the values of 'survival' ($\beta = -0.131$) and 'innovative style of responding to changes' ($\beta = -0.140$).

Further, we analyzed the regression model, where we used the 'index of innovativeness' as the dependent variable. Table 4 presents the final regression model.

Table 4
 Regression analysis

<u>Indicators and indices</u>	<u>Beta</u>	<u>Std. error</u>	<u>B</u>	<u>Std. error</u>	<u>t (157)</u>	<u>p</u>
Intercept			1.277	0.215	5.929	0.000
Openness to experience	0.462	0.070	0.051	0.008	6.635	0.000
Implementing style of responding to changes	0.260	0.070	0.037	0.010	3.741	0.000

Note: dependent variable – *innovativeness index*.

The regression model turned out to be significant ($F(2, 157) = 49.7; p < 0.00000$). When conducting regression analysis, we considered the 'innovativeness index' as a dependent variable. The regression analysis showed that 38.0% of the variance was explained by the following predictors: 'openness to experience' ($\beta = 0.462$), 'implementing style of responding to changes' ($\beta = 0.260$). Thus, *the index of innovativeness* is determined by the severity of such characteristics as 'openness to experience' and 'implementing style of responding to changes'.

Discussion

When assessing the findings of our study, we considered it important to identify the maximum number of indicators of the variability in the analyzed series. At the same time, they were organized according to 5 factors. Factor analysis identified the following significant factors of the readiness for innovative activities among students of technical specialties: *styles of responding to changes, the index of openness, personality values, indices of innovativeness, personal readiness for activities, and motivation*.

The regression analysis helped identify the main indicators of students' readiness for innovative activities, including 'openness to experience', 'index of personal readiness for activities', and 'index of innovativeness'.

The fact that openness to experience is the most significant component in the regression analysis may be explained by the characteristics of this parameter. They indicate a person's ability to perceive new ideas, feel comfortable in an unfamiliar environment, a preference for diversity and intellectual curiosity, the broad range of interests, the ability to make decisions in situations of uncertainty.

The regression analysis showed that 'openness to experience' is largely determined by the value of 'openness to change', 'the index of personal readiness for activities', 'the index of personal innovativeness', that is, the desire for transformation, novelty, independence of thought and choice of modes of action, creativity, research activity, the need for independence and self-government. These are parameters that determine the sensitivity to problem situations, search, problem formulation,

generation of hypotheses, and finding of solutions. At the same time, *the conservative style of responding to changes* interferes with the manifestation of *openness*.

The regression model with the dependent variable of the 'index of innovativeness' showed significant predictors of 'openness to experience' and 'implementing style of responding to changes'. Moreover, compared to *openness to knowledge*, *openness to experience* is more significant. In our opinion, this indicates students' need to gain experience in solving professional problems, to develop professional competencies. Openness to experience is important in the process of professional and personal development. In the context of our research, this gives grounds for a positive outlook on the ability of young people to perceive new ideas, personal development, and becoming a specialist.

In the regression analysis of the index of innovativeness as a dependent variable, the importance of *the implementing style of responding to changes* can be explained by such its characteristics as quick transition from plans to actions, 'step-by-step' implementation of plans, bringing the project to completion, focus on results, willingness to change the situation in order to reach the result.

When analyzing the regression model with the 'index of personal readiness for activities' as a dependent variable we found that it depends on the following parameters: 'index of innovativeness', 'traditional values', 'openness to experience', 'index of motivation', and 'maintaining'. The individual's adherence to the values of survival negatively affects the manifestation of personal readiness for activities.

We should note that *the index of personal readiness for activities* has a negative relationship with *the innovative style of responding to changes*. This may be explained by the fact that the constituents of the parameter of 'index of innovativeness' include the respondents' self-assessment of such characteristics as 'creativity', 'risk for the sake of success', 'orientation towards the future'. There is a positive relationship between the 'index of personal readiness for activities' and the 'index of innovativeness'. At the same time, at the level of students' style of responding to changes, the innovative style of responding to changes is not characteristic of them. If we take into account that the style of responding to changes represents a habitual model of behavior characteristic of the subject, then we can argue that students do not prefer an innovative style of response in a situation of choice. Therefore, stability and preset rules are still more important for them in their activities. They find it difficult to be initiators of changes, to cope with the unknown and uncertainty. Regression analysis shows that the innovative style of responding to changes is not predominant for students in assessing their personal readiness for activities.

Our findings show the inconsistency in the parameters and multidirectional characteristics that determine the personal readiness for activities. Along with the index of innovativeness, openness to experience and motivation, traditional values and values of maintaining are significant, i. e., intolerance to dissent, the choice of standards and social conformism, and the acceptance of authoritarianism. The relationship of indicators in this regression indicates that the orientation towards traditional values and values of maintaining is combined with motivation, which largely determines the efficiency and quality of activities. Individuals with characteristics of traditional values and values of conservation, rarely experience the need for changes, react negatively to transformations; stability is above all for them. Innovative behavior is difficult for this category of individuals.

Having studied a significant number of personal characteristics of students of technical specialties regarding their readiness for innovative activities, we should conclude that they are contradictory, although there are positive trends.

Our findings indicate that innovativeness is not a leading parameter, but only an important variable, and the innovative style of responding to changes is not at all included in the category of important variables in regression analysis. Apparently, for the students of technical specialties who participated in our study, the innovative style of responding to changes is a rare phenomenon and is not preferable in situations of choice of actions.

Reflecting on this, we should agree that the emergence of innovations, new technologies and products is largely determined by the environment, social attitudes and beliefs that are common among people (Lebedeva, 2008; Lebedeva & Yasin, 2009). For example, Manokhina (2011) believes that the traditional values prevailing in the mass consciousness of Russians – adherence to the habitual, fear of change, paternalistic expectations – do not contribute to the formation of consciousness oriented towards innovative changes. They have a deforming impact on individuals' activities and represent an 'institutional trap' of the psychological unreadiness for innovations in society. The researcher emphasizes that "serious intentions of the state run into no less serious traps of innovative development, many of which have rather deep-lying psychological reasons" (Manokhina, 2011, p. 47). They are based on values that take a long time to develop and cannot be changed in a flash. Traditional values and values of survival that many researchers consider prevalent in our society (Inglehart, Foa, Peterson, & Welzel, 2008; Inglehart, 2018; Lebedeva & Yasin, 2009; Atamanova & Bogomaz, 2018) represent a factor when studying the personal readiness for innovative activities among young people. Therefore, we assume that they may impede its implementation.

At the same time, students' characteristics of a bipolar orientation reflect the transitivity of social reality (Martsinkovskaya, 2018). As a result, personal characteristics of young people are a kind of psychological markers of changes taking place in society, culture, economy, when the most significant characteristics of the previous period are preserved and the characteristics of the next stage, which has not yet come, begin to appear (Chagdurova, 2014). They reflect the ongoing changes, as well as the stability and conservatism of traditional values. At the same time, as Guseltseva (2017) argues, the values of modern young people reflect a transnational trend – a movement from the values of security to the values of development, from the values of survival to the values of self-realization. The significant predictors of 'openness to experience', 'openness to change', 'index of personal innovativeness' identified during the regression analysis indicate that young people have a strong and stable demands for self-realization, professional improvement, and active participation in social transformations.

Conclusions

The findings of our study indicate that students studying at technical universities are not fully ready to carry out innovative activities after graduating from the university. When considering the diagnostic parameters, we identified that the innovative style of responding to changes is not predominant for students when assessing their personal readiness for activities. We believe that this fact should be taken into account when discussing the issues of qualitative changes in the country, its transition to an innovative path of development, since organizational and economic components of transformations are important along with psychological characteristics of future specialists.

The most significant factors influencing the manifestation of innovative personality characteristics are, first of all, the values of respondents, styles of responding to changes, and openness to experience.

According to regression analysis, 'openness to experience', 'index of personal readiness for activities', and 'index of innovativeness' are among the leading indicators of students' readiness for innovative activities.

When analyzing values as significant predictors of innovative activities, we observed the heterogeneity of the value system of young people studying at technical universities, a simultaneous manifestation of their values of survival, traditional values, as well as the values of openness to change and self-transcendence. These results speak in favour of transitivity in social reality. Young people have the most significant characteristics of the previous period, which are preserved, and the characteristics of the next stage, which begin to appear. We believe that this will inevitably affect the subsequent professional activities of young people and their personal self-realization.

At the same time, the values of self-transcendence and openness to change, as significant predictors of innovation activities, indicate that young people have a desire for self-development, professional improvement, and active participation in transformations.

Our findings indicate the need to create the educational environment aimed at developing innovative competencies of university students and searching for training models that meet the requirements of the time (Bogomaz, Kozlova, & Atamanova, 2015). They can serve as a psychological basis for design programs for the professional development of future specialists (Atamanova, Bogomaz, & Filippova, 2018; Bogomaz, Klochko, Krasnoryadtseva, & Podoinitsina, 2018).

In addition, the results obtained in our study indicate the importance of personal development in the professional educational process, the importance of psychological and pedagogical support for the development of students' personal potential, formation of the future specialists' experience of innovative activities in higher professional education.

Our findings can be useful in studying the sociocultural dynamics of society and serve as prognostic parameters for future changes when considering the prospects for the future, since these are young people who will have to implement plans for the modernization of the country.

Acknowledgments

This study was supported by a grant from Russian Foundation for Basic Research (project no. 18-013-00781).

References

- Atamanova, I. V., & Bogomaz, S. A. (2018). Innovativeness of modern youth and cultural factors of socio-economic development. In T. A. Nestik, Yu. V. Kovaleva (Eds.), *Social and economic psychology: Collection of scientific papers*. Ser. Proceedings of the Institute of Psychology of the Russian Academy of Sciences (pp. 281–288). Moscow: Institute of Psychology, RAS. (in Russ.).
- Atamanova, I., Bogomaz, S., & Filippova, T. (2018). Modern youth's value orientations and activity in a cross-cultural context. In *7th International Interdisciplinary Scientific Conference "Society. Health. Welfare": Contemporary Social Dynamics and Welfare: Urban and Rural Development Perspectives* (pp. 20). Riga: Riga Stradins University. Retrieved from <http://society-health-welfare.rsu.lv/pdf/abstracts.pdf>
- Bazarov, T. Yu., & Sycheva, M. P. (2012). Creation and testing of the Styles of Responding to changes questionnaire. *Psikhologicheskie issledovaniya*, 5(25), 12. Retrieved from <http://psystudy.ru> (in Russ.).
- Bogomaz, S. A. (2014). The innovative potential of the individual and its assessment. In N. I. Leonov (Ed.), *The human social world: Ser. Lingua Socialis* (pp. 275–279). ERGO. (in Russ.).

- Bogomaz, S. A., Klochko, V. E., Krasnoryadtseva, O. M., & Podoinitsina, M. A. (2018). Self-realization strategies among student youth. *Voprosy psikhologii*, 1, 49–58. (in Russ.).
- Bogomaz, S., Kozlova, N., & Atamanova, I. (2015). University students' personal and professional development: The socio-cultural environment effect. *Procedia – Social and Behavioral Sciences*, 214, 552–558. doi: [10.1016/j.sbspro.2015.11.759](https://doi.org/10.1016/j.sbspro.2015.11.759)
- Buravleva, N., Prokhorenko, D., & Budakova, A. (2019). Study of students motivation and values orientation. In *Book of Abstracts: XVI European Congress of Psychology (ECP 2019)* (pp. 1747). Moscow: Moscow University Press.
- Caprara, G. V., Barbaranelli, C., Borgogni, L., & Perugini, M. (1993). The “big five questionnaire”: A new questionnaire to assess the five factor model. *Personality and Individual Differences*, 15(3), 281–288. doi: [10.1016/0191-8869\(93\)90218-R](https://doi.org/10.1016/0191-8869(93)90218-R)
- Chagdurova, E. D. (2014). ‘Transitivity’ as an object of philosophical understanding. *Vestnik Buryatskogo gosudarstvennogo universiteta (Bulletin of the Buryat State University)*, 6(1), 24–28. (in Russ.).
- Derkach, A. A. (2004). *Acmeological foundations of professional development*. Moscow: MPSI; Voronezh: MODEK. (in Russ.).
- Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, 49(1), 71–75. doi: [10.1207/s15327752jpa4901_13](https://doi.org/10.1207/s15327752jpa4901_13)
- Gordeeva, T. O. (2016). Motivation: New approaches, diagnostics, and practical recommendations. *Sibirskii psikhologicheskii zhurnal (Siberian Journal of Psychology)*, 62, 38–53. (in Russ.). doi: [10.17223/17267080/62/4](https://doi.org/10.17223/17267080/62/4)
- Gusel'tseva, M. S. (2017). Identity in a transitive society: Transformation of values. *Psikhologicheskie Issledovaniya (Psychological Studies)*, 10(54), 5. Retrieved from: <http://psystudy.ru> (in Russ.).
- Inglehart, R. (2018). *Cultural evolution: People's motivations are changing, and reshaping the world*. Moscow: Mysl'. (in Russ.).
- Inglehart, R., Foa, R., Peterson, C., & Welzel, C. (2008). Development, freedom, and rising happiness: A global perspective (1981–2007). *Perspectives on Psychological Science*, 3(4), 264–285. doi: [10.1111/j.1745-6924.2008.00078.x](https://doi.org/10.1111/j.1745-6924.2008.00078.x)
- Karandashev, V. N. (2004). *Schwartz technique for studying personality values: Concept and methodological guidance*. St. Petersburg: Rech'. (in Russ.).
- Khabibulin, R. K. (2015). *Characteristics of the authority of the Russian state power in the minds of citizens* (Doctoral dissertation). Saint Petersburg State University, Saint Petersburg. (in Russ.).
- Klochko, V. E., & Galazhinskii, E. V. (2009). The innovative potential of an individual: A systemic anthropological context. *Vestnik Tomskogo gosudarstvennogo universiteta (Bulletin of Tomsk State University)*, 325, 146–151. (in Russ.).
- Klochko, V. E., & Krasnoryadtseva, O. M. (2010). Characteristics of the operationalization of the concept of ‘personality innovative potential’. *Vestnik Tomskogo gosudarstvennogo universiteta (Bulletin of Tomsk State University)*, 339, 151–154. (in Russ.).
- Kolantaevskaya, A. A., Grishina, N. V., & Bazarov, T. Yu. (2016). Style features of self-determination in a situation of life changes. *Vestnik SPbGU. Seriya 16. Psikhologiya. Pedagogika (Vestnik of Saint Petersburg State University. Series 16: Psychology, Education)*, 4, 51–62. doi: [10.21638/11701/spbu16.2016.404](https://doi.org/10.21638/11701/spbu16.2016.404) (in Russ.).
- Krasnoryadtseva, O. M. (2012). Psychological readiness for innovative activities among students and teachers as a characteristic of the educational environment. *Vestnik Tomskogo gosudarstvennogo universiteta (Bulletin of Tomsk State University)*, 358, 152–157. (in Russ.).

- Lebedeva, N. M. (2008). Cultural values, economic attitudes and attitudes towards innovation in Russia. *Psikhologiya. Zhurnal Vysshei shkoly ekonomiki (Psychology. Journal of the Higher School of Economics)*, 5(2), 68–88. (in Russ.).
- Lebedeva, N. M., & Tatarko, A. N. (2009). Technique for assessing individual attitudes towards innovations. *Al'manakh sovremennoi nauki i obrazovaniya (Almanac of Modern Science and Education)*, 4, Part 2, 89–96. (in Russ.).
- Lebedeva, N. M., & Yasin, E. G. (2009). Culture and innovations: The problem statement. *Forsait (Forsyth)*, 2, 16–26. (in Russ.).
- Leont'ev, A. N. (2005). *Activity, consciousness, and personality*. Moscow: Smysl. (in Russ.).
- Mandrikova, E. Yu. (2010). Development of the questionnaire to measure activity self-organization (QASO). *Psikhologicheskaya diagnostika (Psychological Diagnostics)*, 2, 59–83. (in Russ.).
- Manokhina, N. V. (2011). 'Institutional traps' and institutional vacuum in the Russian innovation environment. *Vestnik Saratovskogo gosudarstvennogo sotsial'no-ekonomicheskogo universiteta (Bulletin of the Saratov State Social and Economic University)*, 5, 44–48. (in Russ.).
- Martsinkovskaya, T. D. (2018). Transitive society as a psychological phenomenon. In A. G. Asmolov (Ed.), *Mobilis in mobili: Personality in an era of change* (pp. 150–165). Moscow: YaSK. (in Russ.).
- Osin, E. N., & Leont'ev D. A. (2020). Brief Russian-language scales for the diagnosis of subjective well-being: psychometric characteristics and comparative analysis. *Monitoring obshchestvennogo mneniya: Ekonomicheskie i sotsial'nye peremeny (Public Opinion Monitoring: Economic and Social Change)*, 1, 117–142. doi: [10.14515/monitoring.2020.1.06](https://doi.org/10.14515/monitoring.2020.1.06) (in Russ.).
- Osin, E. N., Rasskazova, E. I., Neyaskina, Yu. Yu., Dorfman, L. Ya., & Aleksandrova, L. A. (2015). Operationalization of the five-factor model of personality traits in the Russian sample. *Psikhologicheskaya diagnostika (Psychological Diagnostics)*, 3, 80–104. (in Russ.).
- Perikova, E. I., Atamanova, I. V., & Bogomaz, S. A. (2020). *Psychological readiness for innovative activities among youth in St. Petersburg and Tomsk. Science for Education Today*, 1, 62–78. doi: [10.15293/2658-6762.2001.04](https://doi.org/10.15293/2658-6762.2001.04) (in Russ.).
- Ponukalin, A. Al. (2010). Socio-psychological issues of innovation activities. *Uchenye zapiski pedagogicheskogo instituta SGU im. N. G. Chernyshevskogo. Seriya: Psikhologiya. Pedagogika (Scientific Notes of Pedagogical Institute of Saratov State University n. a. N. G. Chernyshevsky. Series: Psychology. Pedagogy)*, 2, 24–27. (in Russ.).
- Schwartz, S. H. (2012). An overview of the Schwartz theory of basic values. *Online Readings in Psychology and Culture*, 2(1). doi: [10.9707/2307-0919.1116](https://doi.org/10.9707/2307-0919.1116)
- Schwartz, S. H., Cieciuch, J., Vecchione, M., Davidov, E., Fischer, R., Beierlein, C., ... Konty, M. (2012). Refining the theory of basic individual values. *Journal of Personality and Social Psychology*, 103(4), 663–688. doi: [10.1037/a0029393](https://doi.org/10.1037/a0029393)
- Schwartz, S. H., Cieciuch, J., Vecchione, M., Torres, C., Dirilen-Gumus, O., & Butenko, T. (2017). Value tradeoffs propel and inhibit behavior: Validating the 19 refined values in four countries. *European Journal of Social Psychology*, 47(3), 241–258. doi: [10.1002/ejsp.2228](https://doi.org/10.1002/ejsp.2228)
- Scott, S. G., & Bruce, R. A. (2017). Determinants of innovative behavior: A path model of individual innovation in the workplace. *Academy of Management Journal*, 37(3). doi: [10.5465/256701](https://doi.org/10.5465/256701)
- Sheldon, K. M., & Hilpert, J. C. (2012). The balanced measure of psychological needs (BMPN) scale: An alternative domain general measure of need satisfaction. *Motivation and Emotion*, 36, 439–451. doi: [10.1007/s11031-012-9279-4](https://doi.org/10.1007/s11031-012-9279-4)

- Sugonyaev, K. V. (2018). Study of psychometric characteristics of Schwartz Portraits Values Questionnaire (PVQ) modified by V. Karandashev and its revision. In S. E. Tarazevich (Ed.), *Actual issues of ergonomics, habitability, and psychological support of personnel of special-purpose facilities: Proceedings of the 2nd interdisciplinary theoretical and practical conference* (pp. 186–198). Korolev: PSTM. (in Russ.).
- Tyklyuk, N. V. (2007). Readiness for activities as an acmeological phenomenon. *Akmeologiya (Acmeology)*, 1, 18–21. (in Russ.).
- Yuan, F., & Woodman, R. W. (2017). Innovative behavior in the workplace: The role of performance and image outcome expectations. *Academy of Management Journal*, 53(2). doi: [10.5465/amj.2010.49388995](https://doi.org/10.5465/amj.2010.49388995)

No conflict of interest