

# COGNITIVE AND STYLE PREDICTORS OF THE STUDENTS' PSYCHOLOGICAL WELL-BEING

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## ABSTRACT

The article analyses the psychological well-being and basic beliefs of students from the point of view of various variables, but the particular attention is paid to cognitive style, which is studied as the way of information assessment, determining person's intellectual activity as well as own life activity in general. Theoretical and multivariate regression (stepwise method) analyses allowed us to define the models of psychological well-being and basic beliefs predictors at the significance levels from  $p \leq 0.000$  to  $p \leq 0.043$ . The number of the students' basic beliefs and psychological well-being style models is 17 of hypothetical 18 models; this result reflects a high (94.4 percent) study subject matter coverage. The following groups of the models were pointed out in a process of categorization: "harmonic" (these cognitive styles are highly efficient and prove that the style criteria correlate with the basic beliefs and psychological well-being ones); "tending to harmonize" (characterized by the cognitive styles inclusiveness dominating, leading to activity efficiency, but including individual style pole-correctors); "ambivalent" (cognitive style poles inclusiveness dominates, while other poles domination decreases). The following conclusions are made on the basis of statistically significant results: the level and peculiarities of the style poles and students' psychological well-being and basic beliefs regression equations correlation is the determinant, defining the success of these poles and beliefs directly or indirectly. The results of the research enlarge scientific facts about cognitive styles being predictors of students' psychological well-being and basic beliefs and make their metacognitive regulation and evaluation possible.

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## 1. INTRODUCTION

The problems of psychological well-being are topical in a modern world. Unfavourable trends and difficulties in life of modern human increase the number of stressed persons unsatisfied with their lives, assessing the world from a pessimistic point of view. In

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this case personal self-confidence, commitment to succeed, belief in a better future is lost; person becomes less active and tenacious; as a result person's life goals and values change. It is impossible to change the external, objective circumstances that determine the person's well-being, but it can be assumed that the well-being of a person is mainly determined by the peculiarities of one's perception, analysis and assessment of the surrounding world. Each event (situation, circumstances) becomes psychologically important and meaningful as a result of personal perceiving, categorizing and understanding it. The conceptual abilities of a person, expressed in categorizing, explaining, interpreting, cognitive style prevailing (analytic/synthetic perception, reflexivity /impulsiveness, differentiation/integrity, etc.), reflect the peculiarities of a

person's cognitive assessment of the social conditions and environment, events and situations. Cognitive and style strategies used by humans to evaluate themselves and the world around can determine persons' basic beliefs and psychological well-being. This scientific guess determined the purpose of this research.

If analyzing the notion of "well-being", it is important to note that there are many approaches nowadays (e.g., Bradburn N. Diener, E., Deci E. L. Ryan, K. Ryff C. Waterman A. S., Luhmann M., Hofman W., Eid M., Lucas, R. E., Fesenko P. P., etc.) focused on different definitions and peculiarities of this notion. So, two models of well-being are traditionally defined: subjective well-being (SWB) (Luhmann et al., 2012; Diener and Ryan, 2009) as well as psychological well-being (PWB) (Ryff, 1995).

Theoretical analysis of the studies carried out helps to identify the basic characteristics of the "well-being" notion.

To begin with, the "well-being" is an integral social and psychological notion, including person's cognitive appraisal and attitude to oneself, one's life, personal orientation (and its level) on achieving basic components of positive living and thinking.

Secondly, well-being correlates with a large number of objective and subjective variables reflecting different aspects and spheres of human life. Thus, objective factors of well-being include: social relations, peculiarities of the environment (including social and economic conditions), number of brothers and sisters, living conditions, mother and father's level of education, etc. (Malkoç, 2011).

Subjective factors can be conditionally classified into:

- **individually-typological** (physiological): physical viability, physical activity, somatic symptoms, stress, physical and psychological health (Kern et al., 2015; Malkoç, 2011); chronic fatigue syndrome (CFS) (Mason et al., 2019).

- **cognitive (intellectual)**: the level of brain building (Kern et al., 2015) cognitive control, self-reflection (Shi, et al, 2018); consciousness (Iani et al., 2017), creative thinking (Mason et al., 2019; Kholodnaya, 2015), etc.

- **personal**: subjective feeling of happiness, life satisfaction (Waterman, 2008); psychological safety, value, control (Horvath, 2018); inwardness (Kern et al., 2015); self-efficiency, resilience (subjective vitality) (Fini

et al., 2010); the five board personality traits (Big Five Personality), i.e. neuroticism is a negative predictor of subjective well-being whereas extraversion and conscientiousness are positive predictors of subjective well-being; self-confident coping style, etc. (Malkoç, 2011).

- **social and psychological**: relations with other persons (Carnelley, K.B., and Janoff-Bulman, R., 1992), forgiveness (lack of feeling of guilt) (Bono, McCullough and Root, 2008); hope for the future, success, etc. (Kern et al., 2015; Sheridan et al., 2015).

Thirdly, each person has own "standard" of psychological well-being (Rasskazova et al., 2017). That is why it is necessary to take into account directly measured level of well-being while studying this notion, as well as an internal, individual coordinates system which correlates with a person's own psychological well-being understanding.

Fourthly, general concept of psychological well-being can be divided into "ideal psychological well-being" defined as the degree of person's orientation on positive functioning (desire to be and to act autonomously, to have positive relations with people around, to grow and develop personally, etc.); and "real psychological well-being", i.e. subjective estimation of this orientation level in person's real life. Moreover, this aspect considers "well-being" as a combination of two states: instant (the level of person being satisfied with occasional life experience) and predictive (reflects the expected probability of person being satisfied with the future aspirations) (Kopsov, 2019).

In a fifth place, "well-being" has a complex structure including cognitive and affective components. Despite the diversity of views on the structure of well-being (e.g., a newly introduced Seligman 's PERMA model includes five elements of psychological well-being: positive emotions, engagement, relationships, meaning, and achievement), it can be pointed out that the basic elements of the well-being are a person's cognitive and emotional assessment of life and its conditions (Kern et al., 2015; Shi, et al, 2018).

The well-being affective component is subdivided into positive affect (a level that makes person to be happy and pleased with being involved into activity) and negative affect (the level of subjective distress) (Emmons, 2004). From this point of view, the emotional component corresponds to positive emotions, optimistic feelings and distress minimizing.

Cognitive component of the well-being is more complex and multiple. Some Russian researchers (Savchenko and Golovina, 2006) emphasize that the basis of the well-being cognitive component is the person's meanings, values, goals system; this fact is confirmed by other researchers. In particular, it was found out that the personal meaning has close links with subjective and psychological well-being: the goal, inherent in the meaning of a life concept, is the core component of young people well-being forming (Krok, 2018). At the same time, people with a high level of psychological well-being are characterized by ability to realize and implement significant values: the higher the level of the person's well-being is, the more accessible the significant terminal values (from the point of view of possession and implementation) are.

Meaning, goals and values reflect the person's real attitude to the world. They perform a guiding function, help to organize the internal world of the subject; i.e. the well-being is closely connected with the person's basic beliefs.

Basic beliefs are person's hierarchically organized cognitive and emotional implicit opinions, judgments and knowledge, which help the person to perceive the events of the world around and determine person's behavior. Such conclusion can be drawn on the basis of the S. Epstein's cognitive-experimental self-theory and R. Janoff-Bulman's cognitive concept of the person's basic beliefs. There are studies that prove the connection of human well-being with basic beliefs. Thus, the research of Dzuka and Dalbert, (2006) shows that the belief in a just world (BJW) has a positive connection with subjective well-being of old age persons both in general and taking into account individual predictors: subjective health, social contacts (Dzuka and Dalbert, 2006).

There are lots of studies nowadays (e.g., E. G. Antiperovich, S. A. Bogomaz, R. M. Shamionov, etc.) reflecting the relationship between basic beliefs and such variables as self-confidence, sense of life, person's mental and psychological health, etc. Such researchers as Goldenberg, I., Matheson, K., point out that humans (who had psychological trauma in their lives) having positive basic beliefs can be characterized by develop less stressful feelings and tend to use more active and constructive coping strategies (Goldenberg and Matheson, 2005). On the other hand, if a person is exposed to existential stress for a long period of time, own personal view

of life and basic beliefs can be negatively affected and changed. In particular, if a person is depressed or distressed the view of life can even be merciless, basic beliefs are less favourable (e.g., belief in a just and controlled world is poorly expressed, a weak belief in self-control prevails, i.e. the world seems to be unjust and uncontrolled by person) (Zaluski, 2015). Almost the same tendency was found in the research of ter Heide et al., (2017); this study is based on describing the beliefs of refugees: the more pronounced posttraumatic stress disorder (PTSD) is, the more negative the basic beliefs subscales ("Benevolence of World", "Benevolence of People" and "Luck") become (ter Heide et al., 2017).

In this way, the theoretical analysis carried out shows the connection of such basic beliefs as axiological basis, personal assessment of oneself and other people, world in general with psychological well-being of each person. Why do we suppose the basic beliefs and psychological well-being to be correlated with cognitive and style features? Why do some people have a pronounced sense of injustice, making them perceive and assess the world and life in a negative way, interfering with their psychological well-being (according to Monden et al., 2016)? One can assume that the global views of life and their subsequent impact on well-being are based on human's intellectual abilities: the better constructive thinking is developed, the more it correlates with success in work, love, in social relationships, and in maintaining emotional and physical well-being (Epstein and Meier, 1989). Self-reflection, emotional regulation, cognitive control (which are provided by neural networks dynamic interaction), lie at the root of psychological well-being and play an important role in human being successful in work, social relationships and health activities. The higher the mental adaptability and information correlations flexibility are, the higher the level of human's well-being is (Shi, et al, 2018).

Conceptual skills are the core ones among all the intellectual abilities; these skills are mental qualities able to produce some new content absent in actual circumstances or in absorbed basic knowledge. Conceptual skills allow the person to manage own resources (predict their consumption and "recover" them, assess the resources effective using) as well as to open up new resources and opportunities by conceptualizing (categorizing, explaining, interpreting, etc.) of what is happening. (Khazova, 2014., p.17). Conceptualizing

skills play a great role in a system of mental resources: they provide correct cognitive assessment of the actual situation, allow finding new ways of facing the challenges and coping with difficult life situations, help to create and attract new resources, as well as to give resource value to personal mental abilities and objects of external environment (Kholodnaya and Khazova, 2017).

The cognitive system functions through personal and social relationships assessment, as well as through the attitude of the persons towards themselves. E.g., feedback information about success in work from the social environment can lead to a reduction of self-esteem (Khazova, 2014). There are many proves nowadays that the cognitive assessment influence the outcome of situations as well as the person's condition and feelings do. Some researchers (Iani et al., 2017) note that the way a person assesses different situations may be more important for psychological well-being than the actual presence of stress. Cognitive assessment is of great importance in overcoming distressing situations as it defines how the situation is perceived, estimated and evaluated, i.e. acts as a so called "guide" between the situation (event) and the outcome (Iani et al., 2017; Keverski et al., 2016). Cognitive interpretation of the situation as being "stressful" is crucial for assessing, explaining events and finding the strategies of solving the problems. The worse a person sees the situation (as stressful or threatening), the worse his/her adjustment to this situation is, the less correct strategies to solve the problem a person finds (Roesch et al., 2002).

It has also been found that mindfulness as a cognitive function of intellectual activity is positively correlated with such psychological well-being features as personal growth, having a goal in life, autonomy (Iani et al., 2017). The role of cognitive assessment is also of great importance for coping strategies: problem distancing/avoiding or solving. The respondents who assessed their difficulties (family issues were studied) as threatening to their resources were more likely to use the distancing/avoiding coping strategy (Bouchard, 2003).

Thus, conceptualization process is one of the key resources; this process helps to make a differentiated and objective representation of a relevant situation (its characteristics) through the cognitive assessment as well as to estimate own opportunities in a realistic way. It can be stated that the main functions of conceptualization are cognitive

assessment and a sense of a given period of life; effectiveness/ineffectiveness of life and a psychological well-being are the results of cognitive assessment (Kholodnaya and Khazova, 2017).

As well it should be mentioned that not all people having well-developed intellectual resources and abilities use the conceptualization process in different life situations and circumstances correctly. Correct conceptualization process is driven and conditioned by prevailing cognitive styles as well as the ideas of a human about the essence and the nature of own intelligence and personality (mental representations) (Pavlova and Kornilova, 2019; Khazova, 2014; Azeska, Starc, Keverski and 2017).

Khazova, considered in her study (Khazova, 2014) the influence of mental activity cognitive and style characteristics on intellectual activity as well as on life in general. Cognitive styles are unique, specific and sustainable ways of information and gained experience processing through peculiar differences in perceiving, analyzing, structuring, categorizing and reality assessing (Kholodnaya, 2019). Different cognitive styles: cognitive control field dependence/independence, flexibility/rigidity, analytical/synthetic character, reflexivity/impulsiveness (Khazova, 2014) determine the level of subjective control and leadership qualities, human's ability to assess internal world as well as the ability to make realistic prognoses, independent choices. However, the exact cognitive and style characteristics and their peculiar connections and correlations with subjective well-being are insufficiently studied yet.

## 2. MATERIALS AND METHODS

The following methods and techniques were used to define the models of cognitive and style predictors and basic beliefs:

1. The "Cognitive styles of a person's individuality" questionnaire (Rusalov V.M. Volkova, E.V.) aimed at defining independent variables (cognitive styles): cognitive control field dependence/independence, flexibility/rigidity, analytical/synthetic character, etc.;

2. The scales of psychological well-being (Carol D. Ryff) were aimed at defining first group of dependent variables: autonomy, environmental mastery, personal growth, aim in life, etc.;

3. World assumptions scale (WAS) (R.

Janoff-Bulman) helped to pick out the second group of variables: benevolence of the world, meaningfulness of the world and self-worth;

4. Multivariate regression analysis, specifically "Stepwise" method, was used to explain the psychological well-being and basic beliefs variables behaviour through models;

The stepwise criterion (F inclusion probability is  $p \leq 0.050$ , F exclusion probability is  $\geq 0.100$ ) was used.

The models analysis criteria are as follows: dependent variables indices are the signs of a specifically expressed regression: "0,1 - 0,3" - weak; "0,3-0,5" - moderate; "0,5-0,7" - remarkable; "0,7-0,9" - strong; "0,9-1" - very strong; absolute term of regression is a sign of the result (psychological well-being and basic beliefs variables) in case if all indices-factors (cognitive styles) are equal to zero.

Two hundred seventy four students (19-23 years old) of the Southern Federal University took part in the research. The average age of the respondents was 20 years old. 50.5 percent male and 49.5 percent female students.

### 3. RESULTS

Seven cognitive and style models of psychological well-being (PWB) were studied at the first step of the research (Table 1).

1<sup>st</sup> PWB model:

$Positive\ relations\ with\ others = 51.639 + 0.563 * CS ("cognitive\ style") "Rigidity" (R).$

The components are defined at the following significance levels:  $p \leq 0.000$ ; 0.027. Predictors of the positive relations with others: constant; cognitive style "Rigidity".

2<sup>nd</sup> PWB model:

$Autonomy = 44.835 + 0.702 * CS "Being\ intolerant\ to\ unrealistic\ experience" (BI) + 0.697 * CS "Being\ tolerant\ to\ unrealistic\ experience" (BT).$

The components are defined at the significance levels:  $p \leq 0.000$ ; 0.005; 0,005. Such cognitive style as "Being intolerant to unrealistic experience" is of great significance in this model. The following predictors of autonomy are defined: constant, cognitive styles "Being intolerant to unrealistic experience" and "Being tolerant to unrealistic experience"; these styles intercommunicate and influence the dependent variables.

3<sup>rd</sup> PWB model:

$Environmental\ mastery = 43.529$

$+ 0.273 * CS "Field\ dependence" (FD) + 0.118 * CS "Being\ intolerant\ to\ unrealistic\ experience" (BI).$

The components are defined at the following significance levels:  $p \leq 0.000$ ; 0.000; 0,043. Environmental mastery predictors are as follows: constant; "Field dependence" and "Being intolerant to unrealistic experience". "Field dependence" is of greater significance in this model.

4<sup>th</sup> PWB model:

$Personal\ growth = 43.376 + 0.236 * CS "Being\ tolerant\ to\ unrealistic\ experience" (BT).$

The components are defined at the following significance levels:  $p \leq 0.000$ ; 0.000. Personal growth predictors: constant and cognitive style "Being tolerant to unrealistic experience".

5<sup>th</sup> PWB model:

$Life\ goals = 38.088 + 0.288 * CS "Field\ independence" (FI) + 0.283 * CS "Being\ tolerant\ to\ unrealistic\ experience" (BT).$

The components are defined at the significance levels:  $p \leq 0.000$ ; 0.000; 0,018. Life goals predictors are constant, cognitive styles "Field dependence" and "Being tolerant to unrealistic experience". The styles mentioned above are interrelated and influence the dependent variables; "Field independence" cognitive style has a great sway in this very model.

6<sup>th</sup> SWB model:

$Self-acceptance = 46.317 + 0,782 * CS "Field\ independence" (FI).$

Significance levels:  $p \leq 0.000$ ; 0.003. Self-acceptance predictors: constant and "Field independence".

7<sup>th</sup> SWB model:

$Psychological\ well-being = 272.990 + 0.206 * CS "Field\ independence" (FI) + 0.141 * CS "Being\ tolerant\ to\ unrealistic\ experience" (BI).$

Significance levels:  $p \leq 0.000$ ; 0.001; 0,019. Psychological well-being predictors: constant; cognitive styles "Field independence" and "Being tolerant to unrealistic experience". The styles mentioned above intercommunicate and influence the dependent variables; but the "Field independence" cognitive style prevails in this very model.

Consequently, the first step of the research helped to define 7 models out of 7 possible ones (i.e. 100 percent) by using multivariate regression analysis. This fact allow characterizing cognitive and style predictors of psychological well-being in a multidimensional way.

**Table 1.** Style predictors ratio (PBW models)

Models	Cognitive styles (CS)				
	Rig	BT	BI	FD	FI
<b>PWB1</b>	0,563	-	-	-	-
<b>PWB2</b>	-	0,697	0,702	-	-
<b>PWB3</b>	-	-	0,118	0,273	-
<b>PWB4</b>	-	0,236	-	-	-
<b>PWB 5</b>	-	0,283	-	-	0,288
<b>PWB 6</b>	-	-	-	-	0,782
<b>PWB 7</b>	-	-	0,141	-	0,206

The results of the second step of the research (10 cognitive and style models of the basic beliefs (BB) characteristics) are as follows (Table 2):

1<sup>st</sup> BB model:

*Benevolence of the world (BW)* = 2.654 + 0.235\*CS "Flexibility"(F) + 0.129\*CS "Field dependence"(FD) + 0.125\*CS "Concrete conceptualization"(CC).

The components are defined at the following significance levels:  $p \leq 0.000$ ; 0.000; 0,028; 0,033. Benevolence predictors are as follows: constant; such cognitive styles as "Flexibility", "Field dependence", "Actual conceptualization". "Flexibility" cognitive style predominates over two other ones.

2<sup>nd</sup> BB model:

*Benevolence of people (BP)* = 2.807 + 0.230\*CS "Field dependence"(FD) + 0.121\*CS "Flexibility" (F).

The components are defined at the following significance levels:  $p \leq 0.000$ ; 0.000; 0,041. BP predictors are as follows: constant; "Field dependence" and "Flexibility" cognitive styles. "Field dependence" has greater influence here than "Flexibility".

3<sup>rd</sup> BB model:

*Just of the world (J)* = 2.158 - 0.176\*CS "Impulsiveness"(I) + 0.174\*CS "Flexibility"(F) + 0.143\*CS "Being intolerant to unrealistic experience"(BI).

The following significance levels are analyzed:  $p \leq 0.000$ ; 0.005; 0,003; 0,016. Just predictors are as follows: constant; such cognitive styles as "Flexibility", "Being intolerant to unrealistic experience" as well as "Impulsiveness" having feedback link with the other styles and predominating over them in this model.

4<sup>th</sup> BB regression model:

*World Controllability (C)* = 3,094 + 0.132\*CS "Abstract conceptualization"(AC) + 0.131\*CS "Concrete conceptualization"(CC)

The following significance levels are defined:  $p \leq 0,000$ ; 0,029; 0,031. Control predictors are the following ones: such cognitive styles as "Abstract conceptualization" and "Concrete conceptualization".

5<sup>th</sup> BB regression model:

*Self-worth (SW)* = 2.541 + 0,126\*CS "Abstract conceptualization"(AC) + 0,182\*CS "Impulsiveness"(I) - 0,186\*CS "Rigidity"(Rig) + 0,161\*CS "Field independence" (FI).

The components of the model are defined at the following significance levels:  $p \leq 0,000$ ; 0.045; 0,002; 0,001; 0,008. The SW predictors set is as follows: constant; such cognitive styles as "Abstract conceptualization", "Impulsiveness", "Rigidity" (with the feedback link), "Field independence".

6<sup>th</sup> BB model:

*Self-control (SC)* = 3.252 + 0.249\*CS "Reflexivity"(R) + 0.122\*CS "Abstract conceptualization"(AC) - 0,144\*CS "Rigidity"(Rig) + 0.125\*CS "Field independence"(FI).

The following significance levels are defined in this model:  $p \leq 0.000$ ; 0.000; 0,028; 0,033. Self-control predictors: "Reflexivity", "Abstract conceptualization", "Field independence" as well as "Rigidity" (cognitive style with a feedback link).

7<sup>th</sup> BB model

*Luck (L)* = 3.785 - 0.215\*CS "Rigidity"(Rig) + 0,150\*CS "Being tolerant to unrealistic experience"(BT).

The components of the model are defined at the following levels:  $p \leq 0.000$ ; 0.000; 0,011. Luck predictors are "Rigidity" (cognitive style with a feedback link) and "Being tolerant to unrealistic experience".

8<sup>th</sup> BB model:

*Attitude to the benevolence of the world* = 2.613 + 0.193\*CS "Flexibility"(F) + 0.185\*CS "Field dependence"(FD) + 0.115\*CS "Being tolerant to unrealistic experience"(BT).

The components of this model are as follows:  $p \leq 0.000$ ; 0.001; 0,002; 0,050. The group of interrelated predictors is obtained as a result of this model analyzing; these predictors have an influence on dependent variable and include such cognitive styles as "Flexibility", "Field dependence", "Being tolerant to unrealistic experience".

9<sup>th</sup> BB model:

*General attitude to the sense of life* = 3.319 + 0.162\*CS "Impulsiveness"(I) - 0,181\*CS "Rigidity"(Rig) + 0.156\*CS "Flexibility"(F) + 0,159\*CS "Being tolerant

to unrealistic experience" (BT).

The components are defined at the following significance levels:  $p \leq 0.000$ ; 0,008; 0,002; 0,007; 0,009. The general attitude predictors are as follows: "Impulsiveness", "Rigidity" (cognitive style with a feedback link), "Flexibility" and "Being tolerant to unrealistic experience"; these styles correlate and have an effect on the "General attitude" variable.

10<sup>th</sup> BB model:

$$\text{Sense of self-worth} = 7.878 - 0.206 * \text{CS "Rigidity" (Rig)} + 0.243 * \text{CS "Abstract conceptualization" (AC)} + 0.287 * \text{CS "Reflexivity"} + 0,260 * \text{CS "Field dependence" (FD)}.$$

The components of the model are defined at the following significance levels:  $p \leq 0.000$ ; 0,019; 0,021; 0,013; 0,026. The following group of predictors characterizes the 10th model: "Rigidity" (cognitive style with a feedback link), "Abstract conceptualization", "Reflexivity" and "Field dependence".

In view of this, 10 models (90.9 percent) out of 11 possible were defined at this step of the research. These results are a good proof of hypotheses on the basic beliefs cognitive style predictors. Only 11th model did not include any variables. This was an effect of defining the predictors in a field of cognitive styles of "Randomness" variable.

**Table 2.** Style predictors ratio (BB models)

Models	Cognitive styles (CS)				
	R	I	F	AC	Rig
BB1	-	-	0,235	-	-
BB2	-	-	0,121	-	-
BB3	-	-0,176	0,174	-	-
BB4	-	-	-	0,132	-
BB5	-	0,182	-	0,126	-0,186
BB6	0,249	-	-	0,122	-0,144
BB7	-	-	-	-	-0,125
BB8	-	-	0,193	-	-
BB9	-	0,162	0,156	-	-0,181
BB10	-	-	-	0,243	-0,206

**Table 2.** Style predictors ratio (BB models). Continuation

Models	Cognitive styles (CS)				
	FD	FI	BT	CC	BI
BB1	0,129	-	-	0,125	-
BB2	0,23	-	-	-	-
BB3	-	-	-	-	0,143
BB4	-	-	-	0,131	-
BB5	-	0,161	-	-	-
BB6	-	0,125	-	-	-
BB7	-	-	0,15	-	-
BB8	0,185	-	0,115	-	-
BB9	-	-	0,159	-	-
BB10	0,26	-	-	-	-

## 4. DISCUSSIONS

Analysis of the *first step* of the research showed that the models of psychological well-being and basic beliefs cognitive and style predictors are characterized by some peculiarities. Two groups of models are defined by categorization on the first step.

First group is notionally called "harmonic" predictors models (4 models in total – 57.14 percent) of personal growth, purposes in life, self-acceptance and psychological well-being (PWB4, PWB5, PWB6, PWB7). These models definition is quite coherent with some actual researchers' studies, pointing out that the cognitive assessment is in some sense an intermediate between the experience and the result (Kholodnaya, 2019; Khazova, 2014; Oliver and Brough, 2002). These models are characterized by the cognitive style efficiency; this effect, in M.A. Kholodnaya's opinion, means that such cognitive style pole as "Field independence" can have an influence on productive aspects of activity (Kholodnaya, 2019).

In particular, it has been found that two variables act as the purposes in life (PWB5 group) predictors: first of them is "Field independence", reflecting the control strategies correct formation and usage for information processing; these control strategies are aimed at checking the visible field impact on the process and to define the purpose in life. The second predictor is "Being tolerant to unrealistic experience" expressing the ability to receive information not corresponding to the attitudes already formed and to take it into account while determining the life purposes. The received result correlates to the self-control individual style researches (Bolotova and Puretskiy, 2015); these researches show that the "field independent" persons are

characterized by the higher level of self-control while planning, analyzing the aims of activity, modelling significant conditions and programming their activity than the "field dependent" ones. "Field independent" persons have more resources for exact situation regulating and managing (Padun, 2009). The model explains the reasons of young persons' poorly-developed (or undeveloped) vision of the future: they may have an insufficiently developed "Field dependence" and "Being tolerant to unrealistic experience" resources.

It has been found out that the "Field independence" coupled with the "Being tolerant to unrealistic experience" (PWB7 model) are the predictors of psychological well-being acting as an integral state of personality. It can be assumed that the perfect implementation of personal resources and abilities aimed at achieving the result, success and happiness, as well as the degree of these resources and abilities realization, is connected with the person's ability to use control strategies for information processing, to be resistant to various unusual and unexpected information.

An important result of the research is the identification of the personal growth predictor (PWB4 model). It is found out that "Being tolerant to unrealistic experience" (being resistant to new impressions not corresponding to the already existing ones and the possibility of their adoption) is the main driving force contributing to the new experience obtaining openness, sense of own potential realization and changes in accordance with own knowledge and achievements. It can be said that the young people, characterized by an advanced metacognitive assessment and control, have a high potential for personal growth.

Self-acceptance (as a positive assessment of own past experience, positive attitude towards oneself, understanding and acceptance of oneself various sides, including good and bad qualities) is determined by correct control strategies forming and using for information processing, ability to assess one's talents and capabilities objectively (i.e. "Field dependence") (PWB6 model). The result is also quite logical: the more a person is oriented to an objective and accurate assessment of own capabilities, the more the person is inclined to accept oneself and all own skills.

The *second group* of the defined models, notionally called "ambivalent" includes 3 models (42.86 percent) of "positive relations

with others" predictors, autonomies and environment management. The name of the group is driven by the influence of ambivalent style pair tolerance/intolerance, rigidity, field dependence and intolerance to unrealistic experience on psychological well-being criteria.

So it has been found that the cognitive style "Rigidity" is a predictor of a positive relationship with others (PWB1 model). There is an opinion (Yashin, 2015) that rigid thinking correlates with human sociability being quite successful. The person characterized by this cognitive style is easier to interact with people in some situations due to the fact that cognitive control rigidity gives an advantage in speed and stability of motor reactions, as well as in subjective confidence; but this process is carried out by more superficial analysis of the current events (Volkova and Gusev, 2016). Meanwhile, people with the same cognitive style find common ground quickly and are more likable, which can also confirm our hypothesis (if persons entering the human relationship system are characterized by rigidity) (Korchin, 1986).

It has also been found out that despite the reflective style high (its value is 6.83 out of 25 possible) potential, the predictors of the students' environment control include the following cognitive styles: "Field dependence", reflecting the control strategies being not formed or incorrectly used in a process of information processing as well as the attention organization faults and its static character; "Being intolerant to unrealistic experience" (resistance to the surrounding reality) (PWB3 model). It can be supposed that the will to power and manage the environment (being a control strategy in relations with people) acts as some compensation for the lack of control cognitive strategies.

Having analyzed the second group of models we can assume that the students are at the so called crucial point of the styles (methods) of analyzing and assessing the surrounding world and its conditions, information processing and structuring, getting an experience in their psychological well-being assessment formation and use. This assumption is logically consistent with the fact that all 7 models contain an absolute term indicative of other factors not considered in the models. Nevertheless, the "ambivalent" group of models, identified in the study, requires further research.

The analysis of the second research step results includes the models of cognitive styles



influencing the students' basic beliefs. Three groups of models were defined thanks to the analysis results categorizing.

The first group of predictors, notionally called "harmonic", includes only 2 models: BB6 and BB7 – 20 percent. These models are characterized by the cognitive styles efficiency, which, according to Kholodnaya M.A., on the one hand, allows obtaining direct evidence of the style criteria being connected with the self-control and luck degrees evaluation indices. On the other hand, scientific facts indicate that such cognitive style poles as "Field independence", "Reflexivity" and "Abstract conceptualization" directly influence the success and efficient aspects of basic beliefs (Kholodnaya and Volkova, 2016).

For example, it is found out that the feedback "Rigidity" and directly correlated "Being tolerant to unrealistic experience" (BB7 model) are the predictors of luck (L) degree assessment. This correlation indicates an ease of changing from verbal functions to sensitive-perceptive ones in a process of luck assessing. This fact is directly connected with "Being tolerant to unrealistic experience", i.e. being tolerant and patient to unexpected "unusual" events (such as luck/fortune). It can be assumed that the less the thinking rigidity and the more the tolerance to unexpected experience are expressed, the more positively a person estimates the events going on from the point of view of luck and success.

The second group (4 models - 40%), notionally named the models "tending to harmonize", include: self-worth (BB5), attitude to benevolence of the world (BB8), attitude to sense of the world (BB9), sense of self-worth (BB10). The models include predominating cognitive style poles ("Field independence", "Reflexivity", "Abstract conceptualization") making the activity efficient; and specific style poles ("Impulsiveness", "Rigidity", "Field dependence") having no effect as the predominating poles do.

In particular, the system of self-worth predictors includes a contradictory element ("Impulsiveness") in addition to sufficiently harmonious styles ("Abstract conceptualization", "Field independence" and a feedback "Rigidity"). In other words, persons' positive self-assessment, own skills and character features estimation are determined by the high level of the concepts differentiation and integration within the individual conceptual system; by subjective experience organization and by control strategies being formed and correctly used

for information (connected with the "self-worth" notion) processing. It can also be said that people tending to reduce rigid control, to reduce difficulty in changing from verbal to sensitive-perceptive functions; who are able to be attentive regarding changes in their individuality are characterized by a rather high development of self-worth predictors. At the same time, what calls attention to itself is the following cognitive style as "Impulsiveness" (ability to respond to a problem quickly, to put forward and analyze hypotheses without fletcherizing) being included into the model. That is why this style is discordant with two other ones. It can be said that students react some subjectively important situations (connected with own personality assessment, self-worth) emotionally and this reaction can be impulsive.

It should be noted as well that such styles as "Flexibility" and "Being tolerant to unrealistic experience" appear in the models consistently. I.e., flexible style and control connected with "Being tolerant to unrealistic experience" and decreased "Rigidity" (feedback) are also the predictors of the world sense persuasion (BB9 model). However, this connection is also complemented by the "Impulsiveness" cognitive style, which is a leading factor, reflecting the tendency of students to respond to a problem quickly without fletcherizing it. It can be assumed that the basic belief of the world being filled with meaning and sense, that all events are non-accidental (they are controlled and are subject to the laws of justice) is based on the ability to subjectively easy changing the ways of information processing in a situation of cognitive conflict, on the resistance to unexpected or unusual information (on the ability to process this information) and on the fast cognitive information processing (it does not always affect the decisions accuracy and correctness negatively). At the same time, the "Rigidity" (having feedback link) index decrease proves the sufficient stability of tolerance criterion and the neuroticism level decrease (Padun, 2009), which contribute to subjective acceptance of the world as being meaningful and controlled.

The *third defined group* consists of four (40%) "ambivalent" models: benevolence of the world (BB1), benevolence of people (BB2), just of the world (BB3), control (BB4).

Such cognitive style poles as "Field dependence", "Concrete conceptualization", "Being intolerant to unrealistic experience" are dominant in this model; the higher these

poles values are, the less efficient the wide range of variables is. "Flexibility" and "Abstract conceptualization" cognitive style poles, causing activity efficiency are at the same time included into the correlations of predictors.

In particular, it became apparent that the predictors of the benevolence of the world persuasion include three cognitive styles; "Flexibility" has more influence than other cognitive styles and reflects active and passive cognitive activity regulation in the course of own opinion assessing. This style is correlated with "Field dependence" as well as with "Actual conceptualization". This correlation reflects the simplicity (specificity) of personal designs, the gaps of conceptual thinking, the benevolence of the world conceptualizing and predicting assessment on the basis of own experience. This cognitively simple world understanding may probably give a person an opportunity to perceive and accept the world in a favourable way, easily coping with any challenges (having no problems with the events interpretation) (Padun, 2009).

The similar tendency is found out in the model of benevolence of people predictors: such cognitive styles as "Field dependence" and "Flexibility" (facility with changing from verbal to sensitive-perceptive functions) lead to believing in benevolence of people and socializing thanks to cognitively simple view of these factors.

The results defined in this (ambivalent) group of models require further research.

## 5. CONCLUSIONS

The research showed that the cognitive styles are a specific form of reality cognitive assessment; these styles are the predictors of the students' psychological well-being and basic beliefs. The research theoretically proves the students' psychological well-being being correlated with basic beliefs; 12 (100 percent) out of 12 possible cognitive style poles are included into the models; these facts help to make an overview of the psychological well-being and basic beliefs style predictors.

The number of identified models of the students' psychological well-being and basic beliefs style predictors is 17 out of 18 hypothetic ones (94.4 percent); this quantity proves that the subject of the research is well-analyzed. One model of predictors ("accidental" variable) did not include any style pole while making the equation. This

fact can be caused by some uncontrolled and inestimable random factor, existing in each system.

The following groups of models (reflecting cognitive styles mobility and efficiency) were defined in a process of the students' psychological well-being and basic beliefs predictors categorizing:

- "harmonic" predictors models, including efficient cognitive styles, giving direct evidence of style criteria being connected and correlated with the psychological well-being and basic beliefs. These models include such predictors as "Field independence", "Reflexivity", "Abstract conceptualization", "Flexibility";

- models "tending to harmonize" are characterized by domination of the cognitive style poles, specifying the activity efficiency, but as well include specific style poles ("Impulsiveness", "Rigidity", "Field dependence") which do not determine the activity;

- "ambivalent" models are characterized by domination of such cognitive style poles as "Field dependence", "Concrete conceptualization", "Being intolerant to unrealistic experience"; if the rates increase, the poles' efficacy lowers. However, separate cognitive style poles ("Flexibility" and "Abstract conceptualization") are included into this group of models; these poles determine the activity efficiency.

Such persistent predictors (degree of incidence is  $\geq 3$ ) of the psychological well-being as "Field independence" and "Being tolerant to unrealistic experience" are defined during the empirical research and have an impact on students' personal growth, purposes in life, self-acceptance and psychological well-being in general.

On the one hand, "Flexibility", "Abstract conceptualization", "Field independence" and "Rigidity" (having feedback link) are the basic persistent predictors of the students' basic beliefs; on the other hand, "Field dependence" while correlating with "Field independence" establishes a new resource; if this resource is flexibly used, it can become a key factor to effective involuntary intellectual control (Kholodnaya, 2019; Padun, 2009). Moreover, "Field dependence" is connected with the age-specific rate; this fact leads to the "Field independence" rate decline among students (the rates of the "Field independence" are maximally expressed during the teenage and early adolescent periods).

"Reflexivity" and "Impulsiveness"

appear in the models infrequently; this fact, in our opinion, reflects the tendency of "Impulsiveness" changing to "Reflexivity" in a process of the psychological well-being and basic beliefs cognitive assessment.

Cognitive styles functioning as the students' psychological well-being and basic beliefs predictors open the potential for their meta-cognitive regulation and assessment; but only further investigations will help to explain some models defined during the present research.

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## Conflict of interests

The authors declare no conflict of interest.

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