



A STUDY ON PSYCHOLOGICAL CAPITAL BY A METHOD OF SEMANTIC DIFFERENTIAL

Andrii Trofimov^{1*}, Kateryna Miliutina², Olga Drobot³, Lesya Lyuta⁴, Dariia Otych⁵, Sergey Pustovyi⁶, Taras Karamushka⁷

^{1,2,4}Taras Shevchenko National University of Kyiv, Ukraine, ³National Aviation University, Ukraine, ⁵National Pedagogical Dragomanov University, Ukraine, ^{6,7}University of Modern Knowledge, Ukraine.

Email: *hrta@bigmir.net

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Abstract

Purpose of the study: The purpose of the study is to create and to test a method based on the principles of semantic differential and to check the level of its consistency with the method of PsyCap.

Methodology: The study was conducted in Ukraine, at the first stage, there were 112 adult participants, where 52 were men and 60 were women. The second stage involved 69 people who were getting second higher education. For the purpose of mathematical and statistical processing of the obtained data, the SPSS 21 program was used, factor analysis and correlation analysis were performed.

Main Findings: The conducted research made it possible to reveal the semantic space of the "work" concept, and to distinguish four main factors: stability, effectiveness, relations in the team and discipline. They do not coincide with the parameters of the PsyCap, which include self-confidence, the ability and willingness to make efforts to successfully accomplish complex tasks - that is efficiency; optimism - a positive attributive style regarding the success of current and future activities; hope - vision of the perspective, purposefulness in the construction of activity; resilience - ability to overcome difficulties, solve problems in the process of achieving the goal.

Applications of this study: The study could be useful for HR-specialists, psychologists, and employees in different spheres. In further research, it is desirable to continue the testing and standardization of the semantic differential "Attitude to work" and to conduct a cross-cultural study to find out if these factors of attitude to work are purely Ukrainian, or they are more general in nature.

Novelty/Originality: Modern methods of studying psychological capital are cumbersome and unprotected from the influence of socially desirable responses. Therefore, there was a need to create a smaller procedure based on the principles of the semantic differential.

Keywords: *Psychological capital, organizational loyalty, semantic differential, work, factor analysis, correlation analysis.*

INTRODUCTION

Research on psychological capital and organizational loyalty of employees is an actual problem of the modern psychology of labor. The transition to the project form of labor organization in many industries requires an assessment of the employees' loyalty and their satisfaction because the termination of the activity of a key specialist before the end of the work period threatens the failure of the entire project (Shahnawaz, Jamee & Abdurrahiman, 2018). Modern methods of studying psychological capital are cumbersome and unprotected from the influence of socially desirable responses (Williams, Kern & Waters, 2015; Wang et al., 2018). Therefore, there was a need to create a smaller procedure that is based on the principles of the semantic differential.

In the international practice of management and applied psychology, the construct of personal potential is operationalized in the concept of "psychological capital" which represents a positive psychological state of a person that allows them to develop and realize their potential (Soraya Santana-Cardenas et al., 2018). The topic of psychological capital was elaborated the most in the organizational context (Verleysen, Lambrechts & Van Acker, 2015; Ziyae, Mobaraki & Saeediyoun, 2015).

The concept of psychological capital appeared relatively recently, and it is associated with positive psychology (Avey, Luthans, & Jensen, 2009). Conducted studies in the psychology of positive organizational behavior showed that to such characteristics of the individual can be attributed: subjective well-being, optimism, hope, psychological resilience and emotional intelligence (Gong, 2018; Martynova et al., 2017; Martynova, 2018; Martynova & Evarovich, 2018). However, it was further discovered that these constructs are conceptually different and can be combined into a single structure of higher-order. And the impact of this structure, in general, is somewhat different than the impact of its individual parts. This construct was named "Psychological Capital" (Avey et al., 2011). The structure of psychological capital includes such phenomena as hope, self-efficacy, optimism, and resilience (Kamei et al., 2018). Studies have shown that a high level of psychological capital is associated with the productivity of the employee and the employee's satisfaction with work (Luthans et al., 2007). He is also a mediator between favorable psychological climate and productivity. The high psychological capital of employees supports the effectiveness of organizational changes, reduces the level of absenteeism (Avey, Patera & West, 2006).

It has also been established that psychological capital affects desirable and undesirable behaviors among employees in the workplace, as highlighted in the conclusions of analytical work by J. B. Avey, R. J. Reichard, F. Luthans and K. H. Mhatre (2011). If we consider psychological capital and productivity, then, in theory, people with high psychological capital have more resources to attract them to pursue the goal and, consequently, they can work better than those with low content of psychological capital (Hobfoll, 2002). At one time, a positive correlation was found between the psychological capital and the performance rating of managers in the financial services industry and the results of the study by Peterson and his colleagues showed that the employee's psychological capital is positively related to the performance rating and the results of financial activity based on individual sales figures (Peterson et al., 2011). High indicators of the relationship between psychological capital and labor productivity were also found in other cultures such as Portugal (Rego et al., 2010; Tosten & Toprak, 2017) and Vietnam (Nguyen&Nguyen, 2012). In our previous studies on the example of Ukrainian commercial and state enterprises, we discovered that organizational loyalty mostly depends on such factors as work attitude (dedication and alienation) and hope(Trofimov et al., 2016).

The purpose of the study is to create and to test a method based on the principles of semantic differential and to check the level of its consistency with the method of PsyCap.

METHODS

The study was conducted in Ukraine, at the first stage, there were 112 adult participants, where 52 were men and 60 were women. Respondents belonged to four different categories - senior students (20 people), civil servants (32), private sector employees (29), and faces that increase their professional qualifications (31). The purpose of the first stage was to conduct a verbal associative experiment and to identify the semantic space of the "work" concept.

The second stage involved 69 people who were receiving a second degree both for the purpose of professional development and in order to change the profession and workplace. Of these, there were 48 women and 21 people, all with previous higher education, working. At this stage, participants of research at the same time filled with a matrix of bipolar semantic differential method and PsyCap.

The key construct of PsyCap relies both on positive psychology and positive organizational behavior. PsyCap is based on such positive psychological resources of the first order as hope, efficacy, resilience, and optimism. They best meet inclusion criteria by being based on theory and research, positive, reliably measurable, state-like, and influencing behavior, performance, attitude, and well-being(Luthans & Youssef-Morgan, 2017).

For mathematical and statistical processing of the obtained data, the SPSS 21 program was used, factor analysis and correlation analysis were performed. In the first phase of the study, we invited respondents to write 10 any associations to the words "work", "employees" and add antonyms to these concepts. It is interesting that the concept of "employees" in all study groups was much less semantically saturated, but emotionally more "charged" than the concept of "work"(Görgens-Ekermans & Herbert, 2013; Takahashi, Ban & Asada, 2016). Therefore, for further work, we chose the notion of "work" as a more general and more saturated with associations. The created associative fields were grouped by both the frequency of references and the content. By frequency characteristics, the distribution depended on the category of research participants, as shown in Table 1.

Table 1: Frequency characteristics of statements depending on the group of respondents

Students		Civil servants		Private sector employees		Advanced training	
concept	Σ	concept	Σ	concept	Σ	concept	Σ
Creativity	92	Employment	197	money	94	technology	63
Fatigue	67	salary	148	instructions	69	self-realization	61
Money	58	stability	98	colleagues	51	Creativity	52
Necessity	43	responsibility	95	duties	45	fatigue	47
Profession	41	Order	56	satisfaction	32	colleagues	32

As can be seen from Table 1, the peculiarities of the studied groups are not only in the predominance of different associations but also in the variety of statements. The largest "breadth" of the associative space was found in the groups of advanced training, the greatest homogeneity of expressions - in the group of civil servants.

After conducting factor analysis, it was found that our model consists of 4 factors, which explain 78% of dispersion. The main component method was used to explain the dispersion.

The curve of the scree plot is shown in Figure 1.

It turns out that the point of fracture offers us 4 factors. After rotation, the result has not changed, but the components of the factors have become clearer.

Scree Plot

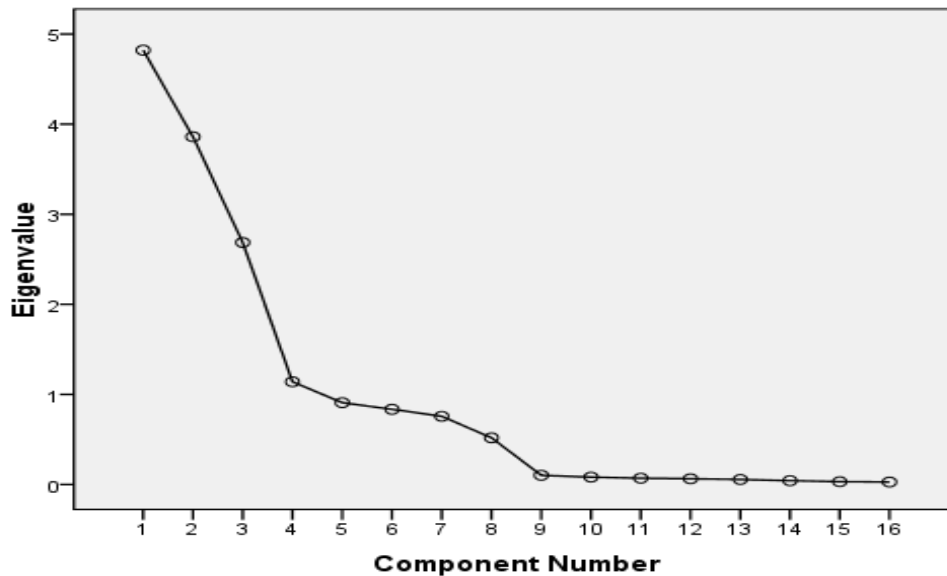


Figure 1: The curve of the scree plot based on component values

Table 2: Factors of satisfaction with labor

No.of factor	Name of factor	Content
1	Stability	Employment, money, stability, career, knowledge
2	Effectiveness	The result, achievement, innovation, creativity, benefit, fatigue (-0.718)
3	Relations with the team	Colleagues, friends, support, help, jealousy (-0.683), gossip (-0.617)
4	Discipline	Duties, terms, responsibility, performance, lateness (-0.672)

The factor model satisfies the main criteria: it is clear, interpreted, the factors are independent and cover 78% of the sample variance. This allowed us to create a method based on the principle of a bipolar semantic differential, which makes it possible to research the presence of each factor in the activity of a person at their workplace. The opposite pole of the semantic matrix was made by antonyms, which were considered as such with the highest frequency by our respondents. Sometimes this opposition seems to be strange from a linguistic point of view, but for most respondents, it is exactly like that, for example: "colleagues - clients". For the purpose of greater reliability, the scales had both direct and inverse character.

Table 3: "Attitude to work" blank

	5	4	3	2	1	
1. employment	2	1	0	1	2	Unemployment
2. result	2	1	0	1	2	Process
3. colleagues	2	1	0	1	2	Clients
4. responsibilities	2	1	0	1	2	Rights
5. money	2	1	0	1	2	Poverty
6. Achievements	2	1	0	1	2	Fatigue
7. friends	2	1	0	1	2	the enemies
8. terms	2	1	0	1	2	Delays
9. Stability	2	1	0	1	2	Uncertainty
10. Innovations	2	1	0	1	2	Traditions
11. gossip	2	1	0	1	2	Openness

12. responsibility	2	1	0	1	2	Carelessness
13. knowledge	2	1	0	1	2	Mistakes
14. creativity	2	1	0	1	2	Routine
15. support	2	1	0	1	2	Hostility
16. Late	2	1	0	1	2	Punctuality
17. Career	2	1	0	1	2	Futility
18. benefit	2	1	0	1	2	Damage
19. jealousy	2	1	0	1	2	Help
20. performance	2	1	0	1	2	Rejection

The respondent is invited to choose one of the dichotomy statements and assess the degree of representation of this phenomenon in their activities at a specific workplace. The method gives an opportunity to evaluate both the general index of attitude to work and the individual components: stability (1,5,9, 13, 17); effectiveness (2,6, 10, 14, 18); relationships with the team (3,7, 11 - inverse, 15, 19-inverse); discipline (4,8,12, 16 - inverse, 20).

The total number of points can range from 5 to 25 for each scale, and from 20 to 100 for the overall index.

RESULTS AND DISCUSSION

An unexpected result showed that the parameters of attitudes to work of Ukrainian respondents significantly differed from the parameters of psychological capital offered in foreign studies. This can be explained with differences in the mentality of workers related to the peculiarities of culture and the peculiarities of Ukrainian corporate culture. Only a small number of Ukrainian workers are involved in the project form of work organization. Authoritarian and bureaucratic types of corporate culture prevail. This affects employees' understanding of the "good work" criteria.

At a further stage of the study, we decided to research the relationship between psychological capital and our factors of attitude to work. As a respondent, a specific group of people was selected. There are those who receive a second higher education. In this group, there are those who are satisfied with their work, have a high level of organizational loyalty and perceive learning as a means of improving their professional competence and career path. Conversely, part of those who are receiving retraining are people who are not satisfied with their current job and want to change both the workplace and professional orientation. That is why among the group the whole spectrum of attitude to work and psychological capital can be seen.

The following correlation was found on the results of the correlation analysis between the results of the methods "PsyCap" and "Attitude to work".

Table 4: Correlations between parameters of PsyCap and "Attitude to work" factors.

	Hope	Efficacy	Resilience	Optimism
Stability	0.487*	0.485*	0.112	0.543**
Effectiveness	0.327	0.758**	0.547**	0.450*
Relations with the team	0.472*	0.153	0.532**	0.237
Discipline	0.256	0.692**	0.451*	0.354

Note: * - correlation at 0.05; ** - correlation at 0.01.

It can be concluded that there is a mainly positive and significant relationship between the indicators of psychological capital and the "Attitude to Work". The "Efficacy" indicator is most closely connected with such scales as stability, effectiveness, and discipline. This can be explained by the peculiarities of the organization of work in Ukrainian institutions, where the very precise, somewhat bureaucratic organization of labor contributes to the feeling of efficiency because it creates a well-functioning interaction with colleagues, independent of personal relationships. The second "loaded" factor is the resilience, it has a close connection not only with the effectiveness and discipline but also with the relationships in the team. The table shows the average index, but for women, the relationship between resilience and relationships in the team had a correlation at 0.677**. This can be explained by the desire of women to a greater level of social support in the workplace, greater sensitivity to the climate of the team. Employee's optimism was less related to attitude to work; it has significant connections, mainly with stability, and to some extent with effectiveness. The optimism of this sample was generally at the average or even below-average level. This situation can be explained by the fact that intensive reforms are taking place in Ukraine in many areas, such as education, health care, the principles of taxation of small businesses, etc (Chen, et al., 2019). These reforms raise a feeling of instability (one of the main values), and negatively affect the employees' optimism.

"Attitude to work" scales appeared to be the least correlated with such an indicator as "Hope". Hope is widely used in everyday language. Many people confuse hopes with accepting the desired one for a real, unfounded positive attitude, emotional uplift, or even an illusion. S. Rick Snyder, whose biggest achievement was the theory and research of hope in positive psychology, defined hope as "a positive motivational state that is based on the interactive gaining of a sense of success and ways to achieve it" (Luthans & Youssef-Morgan, 2017). Snyder's research supports the idea that hope is a

cognitive state, or a type of thinking, in which a person is able to create realistic settings with certain goals and expectations, and then achieve these goals through self-determination. That is, it is not just an attitude to a situation, but the subject's active activity in relation to it. In our study, correlation with the low significance of such parameters as stability and relationships in the team was observed. It was interesting that our respondents have no connection between the level of hope and work effectiveness (Lorenz et al., 2016). This may be due to the overwhelming motivation for avoiding, rather than achieving, and requires further research.

CONCLUSION, SUGGESTION, AND LIMITATIONS

The conducted research made it possible to reveal the semantic space of the "work" concept, and to distinguish four main factors: stability, effectiveness, relations in the team and discipline. They do not coincide with the parameters of the PsyCap, which include self-confidence, the ability and willingness to make efforts to successfully accomplish complex tasks - that is efficiency; optimism - a positive attributive style regarding the success of current and future activities; hope - vision in the perspective, purposefulness in the construction of activity; resilience - ability to overcome difficulties, solve problems in the process of achieving the goal. But the factors found by us have a positive correlation with the identified parameters of psychological capital. These methods are not the same, but they can successfully complement each other for studying organizational loyalty issues.

In further research, it is desirable to continue the testing and standardization of the semantic differential "Attitude to work" and to conduct a cross-cultural study to find out if these factors of attitude to work are purely Ukrainian, or they are more general in nature.

The main idea of the research was to reveal in which semantic field the concept of "work" for Ukrainian respondents is. It was important for us to determine that people themselves invest in the notions of "work" and "employees" since this allows access not to the structure given from the outside by the researcher, but to the reality that the respondents themselves have. From our point of view, this is a semantic space and a system of connotations reflects the unconscious attitude of a person to his professional activity. On the basis of this analysis, it is possible to create a compact semantic differential method that reveals the attitude to work and this place of work.

The study was conducted exclusively on residents of Ukraine with higher education. As a result, we have no data on the specifics of the semantic field as representatives of other strata of the population - unemployed, seasonal workers, representatives of working specialties, etc. The obtained method of diagnosing the attitude to work will be adequate for the residents of Ukraine and needs cross-cultural research in order to adapt it for use in other countries.

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REFERENCES

1. Avey, J. B., Luthans, F. & Jensen, S. M. (2009). Psychological capital: A positive resource for combating employee stress and turnover. *Human Resource Management*, 48(5), 677–693. <https://doi.org/10.1002/hrm.20294>
2. Avey, J. B., Patera, J. L. & West, B. J. (2006). The implications of positive psychological capital on employee absenteeism. *Journal of Leadership & Organizational Studies*, 13(2), 42–60. <https://doi.org/10.1177/10717919070130020401>
3. Avey, J. B., Reichard, R. J., Luthans, F. & Mhatre, K. H. (2011). A meta-analysis of the impact of positive psychological capital on employee attitudes, behaviors, and performance. *Human Resource Development Quarterly*, 22(2), 127–152. <https://doi.org/10.1002/hrdq.20070>
4. Chen, X., Zeng, G., Chang, E.C. & Cheung, H.Y. (2019). What Are the Potential Predictors of Psychological Capital for Chinese Primary School Teachers? *Frontiers in Education*, 50(4). doi: 10.3389/educ.2019.00050
5. Gong, Zh. (2018). Research on the Effect of Positive Emotion Intervention on Employees' Psychological Capital. *Advances in Applied Sociology*, 8, 646-657. doi: 10.4236/aasoci.2018.89038.
6. Gørgens-Ekermans, G., & Herbert, M. (2013). Psychological capital: Internal and external validity of the Psychological Capital Questionnaire (PCQ-24) on a South African sample. *SA Journal of Industrial Psychology*, 39(2), Art. #1131. <http://dx.doi.org/10.4102/sajip.v39i2.1131>
7. Hobfoll, S. (2002). Social and psychological resources and adaptation. *Review of General Psychology*, 6, 307–324. <https://doi.org/10.1037//1089-2680.6.4.307>
8. Kamei, H., Ferreira, M.C., Valentini, F., Peres, M.F.P., Kamei, P.T. & Damasio, B.F. (2018). Psychological Capital Questionnaire – Short Version (PCQ-12): evidence of Validity of The Brazilian Version. *Psico-USF*, 23(2), 203-214. <http://dx.doi.org/10.1590/1413-82712018230202>
9. Lorenz, T., Beer, C., Pütz, J. & Heinitz, K. (2016). Measuring Psychological Capital: Construction and Validation of the Compound PsyCap Scale (CPC-12). *PLoS One*, 11(4): e0152892. doi: 10.1371/journal.pone.0152892

10. Luthans, F. & Youssef-Morgan, C.M. (2017). Psychological Capital: An Evidence-Based Positive Approach. *Annual Review of Organizational Psychology and Organizational Behavior*, 4, 339-366. doi 10.1146/annurev-orgpsych-032516-113324
11. Luthans, F., Avolio, B. J., Avey, J. B. & Norman, S. M. (2007). Positive psychological capital: Measurement and relationship with performance and satisfaction. *Personnel Psychology*, 60(3), 541–572.
12. Martynova, S. (2018). Modern Russian society in the context of antroposocietal approach. *Annals of Anthropological Practice*, 42(1), 19-28. <https://doi.org/10.1111/napa.12115>
13. Martynova, S.E. & Evarovich, S.A. (2018). Participative HR-Technologies in the Governance of the Russian Regions. *Space and Culture, India*, 6(4), 36-47. <https://doi.org/10.20896/saci.v6i4.384>
14. Martynova, S.E., Dmitriev, Y.G., Gajfullina, M.M. & Totskaya, Y.A. (2017). “Service” Municipal Administration as Part of the Development of Youth Entrepreneurship in Russia. *Social Indicators Research*, 133(3), 1151-1164. <https://doi.org/10.1007/s11205-016-1406-2>
15. Nguyen, T. D. & Nguyen, T. T. M. (2012). Psychological capital, quality of work life, and quality of life of marketers: Evidence from Vietnam. *Journal of Macromarketing*, 32, 87–95. <https://doi.org/10.1177/0276146711422065>
16. Peterson, S. J., Luthans, F., Avolio, B. J., Walumbwa, F. O. & Zhang, Z. (2011). Psychological capital and employee performance: A latent growth modelling approach. *Personnel Psychology*, 64, 427–450. <https://doi.org/10.1111/j.1744-6570.2011.01215.x>
17. Rego, A., Marques, C., Leal, S., Sousa, F. & Pina e Cunha, M. (2010). Psychological capital and performance of Portuguese civil servants: Exploring neutralizers in the context of an appraisal system. *International Journal of Human Resource Management*, 21, 1531–1552. <https://doi.org/10.1080/09585192.2010.488459>
18. Shah Nawaz, M.G., Jamee, S. & Abdurrahman, A. (2018). Social Capital and Psychological Capital as Predictors of Performance and Wellbeing in the Indian Context. *Defence Life Science Journal*, 3(4), 348-355. DOI: 10.14429/dlsj.3.13399
19. Soraya Santana-Cardenas, S., Viseu, J., Lopez Nuñez, M.I. & De Jesus, S.N. (2018). Validity and reliability evidence of the Psychological Capital Questionnaire-12 in a sample of Mexican workers. *Anales de Psicología*, 34(3), 562-570. <http://dx.doi.org/10.6018/analesps.34.3.319211>
20. Takahashi, H., Ban, M. & Asada, M. (2016). Semantic Differential Scale Method Can Reveal Multi-Dimensional Aspects of Mind Perception. *Frontiers in Psychology*, 7: 1717. doi: 10.3389/fpsyg.2016.01717
21. Tosten, R., & Toprak, M. (2017). Positive psychological capital and emotional labor: A study in educational organizations. *Cogent Education*, 4(1), 1301012. <https://doi.org/10.1080/2331186X.2017.1301012>
22. Trofimov, A., Bondar, I., Trofimova, D., Miliutina, K. & Riabchych, I. (2016). Organizational commitment factors: role of employee work engagement *Revista Espacios*, 28(24), 18.
23. Verleysen, B., Lambrechts, F. & Van Acker, F. (2015). Building Psychological Capital With Appreciative Inquiry: Investigating the Mediating Role of Basic Psychological Need Satisfaction. *The Journal of Applied Behavioral Science*, 51(1), 10-35. DOI: 10.1177/0021886314540209
24. Wang, Y., Tsai, Ch.-H., Tsai, F.-Sh., Huang, W. & de la Cruz, Sh. M. (2018). Antecedent and Consequences of Psychological Capital of Entrepreneurs. *Sustainability*, 10, 3717. doi:10.3390/su10103717
25. Williams, P., Kern, M.L. & Waters, L. (2015). A Longitudinal Examination of the Association Between Psychological Capital, Perception of Organizational Virtues and Work Happiness in School Staff. *Psychology of Well-Being*, 5, 5. <https://doi.org/10.1186/s13612-015-0032-0>
26. Ziyae, B., Mobaraki, M.H. & Saediyoun, M. (2015). The Effect of Psychological Capital on Innovation in Information Technology. *Journal of Global Entrepreneurship Research*, 5, 8. <https://doi.org/10.1186/s40497-015-0024-9>