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УДК159.95:64.06-049.32

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PSYCHOLOGICAL CHARACTERISTICS OF REPRESENTATIVES OF "PERSON – TECHNICS" GROUP OF PROFESSIONS AS A FACTOR OF JOB SATISFACTION AND EFFICACY

Анотація. Проаналізовано, теоретично обґрунтовано та емпірично перевірено зв'язок індивідуально-психологічних характеристик представників групи професій «людина-техніка» та їх ефективністю і задоволеністю роботою на прикладі слюсарів з ремонту та експлуатації газового устаткування. На вибірці, що складалась із сорока слюсарів-ремонтників газового устаткування та чотирьох їх безпосередніх керівників була емпірично встановлена наявність зв'язку між оцінкою ефективності праці й задоволеністю роботою та високим рівнем технічних здібностей, логікоматематичним, візуально-просторовим інтелектом та толерантністю до невизначеності.

Ключові слова: індивідуально-психологічнимі характеристики, задоволеність роботою, ефективність, представники групи професій «людина-техніка».

Аннотация. Проанализированы особенности связи между оценкой эффективности и удовлетворенности работой представителей группы профессий «человек-техника» с их индивидуально-психологическими характеристиками на примере слесарей по ремонту и эксплуатации газового оборудования. Практическое применение результатов исследования заключается в их потенциальной ценности для менеджеров по персоналу и HR-отделов предприятий с целью поиска сотрудников, которые лучше подходят для такой группы профессий, а также с целью мотивации, повышения удовлетворенности и эффективности уже работающих специалистов.

Ключевые слова: индивидуально-психологические характеристики, удовлетворенность работой, оценка эффективности, представители группы профессий «человек-техника».

Problem identification. The urgency of investigation of individual psychological characteristics of representatives of the "person – technics" group of professions as a factor of their job satisfaction and efficacy is grounded by the fact that current conditions of economy development demand the high level of the quality of training of competitive professionals who are to be successful in professional self-realization and career. Work efficacy of these employees considerably depend on their psychological characteristics. At the same time, the data concerning manifestation of personality features in the process professional development allow to predict and improve it.

The analysis of the latest research findings. The problematics devoted to job satisfaction and work efficacy in relation to individual psychological characteristics of professionals has been worked out in the works of many domestic and foreign scientists. Different aspects of this matter, in particular, were analyzed in the papers by L. P. Alekseeva, M. P. Vasylieva, E. A. Klimov, A. K. Markova, L. A. Petrovskaya, L. P. Pukhovskaya, S. A. Sysoeva, S. S. Vitvyts'ka, O. V. Voznyuk, A. A. Dubasenyuk, M. V. Levkivs'kyi, G. S. Selevko etc. The works of Ukrainian psychologists L. M. Dybkova, V. I. Svystun, D. M. Goldevs'ka, O. Y. Kovalenko, O. G. Romanovs'ky, M. R. Mruga, L. G. Kaydalova are devoted to research of professional competence of future specialists in different fields.

Work efficacy is viewed by many authors as a complex characteristics of professional activity expressed in its quantitative and qualitative indices and determined by a person's integral characteristics that makes it possible to achieve a fairly high socially meaningful result of work and its products (material or spiritual) that comply with the demand of the society. Work satisfaction, as considerable amount of research shows (Cordero et al., 1998; Desselle, 2007; Faragher et al., 2005; Judge et al., 2002; Kaap-Deeder et al., 2018; Lee & Wilbur, 1985), is an important component of social psychological climate in a company

being also a base for development and realization of positive psychological atmosphere in the group as well as a result of stable positive relationship between employees. Job satisfaction is influenced by the ratio between the essence of desires, motives and particular efficacy in the professional activity. Cognitive abilities, emotional stability, adaptation mastery, labour practice of employees, perspectives for a worker to use all knowledge and skills that he possesses, coordination of demands with his abilities named as work congruency, and organizational justice are all considered individual and psychological features that have a certain impact on job satisfaction (Petty et al., 1984; Scarpello & Campbell, 1993; Schmidt, 2007; Scotter, 2000; Tietjen & Myers, 1998).

The objective of the present paper lies in determining the specifics of the connection of job satisfaction and efficacy with individual and psychological characteristics of representatives of the group of professions "person – technics" on the example of craftsmen responsible for repairing and maintenance of gas equipment.

Presentation of the subject matter of the research. Theoretical analysis of the sources of literature allows to state that there exist the following requirements to individual psychological characteristics of such employees concerning the matter of their efficacy in work: a fairly high level of general and technical intelligence, good attention, operational in particular; self-confidence, resilience, intention to work, purposefulness as personality characteristics; being active and resourceful in complicated situations, demanding for oneself and others as social behavioral characteristics (Klimov, 1996; Kokun, 2010; Kunda et al., 2002; Mansfield, 1996; Muzyka, 2008; Watson & Meiksins, 1991). The ability to organize and manage the work is meaningful.

Speaking about the work efficacy of representatives of technical professions, a lot of researchers highlight that both its objective and subjective indices are to be considered (Bender et al., 2018; Chung et al., 2015; Hilton et al., 2009; Pidbuts'ka, 2015; Scherbakova, 2015). So, we can conditionally single out two blocks of such indices. The first unites objective characteristics of work efficacy such as effectiveness, productivity, quality, and reliability; subjective indices such as psychological and personal (employees work activity and job satisfaction) belong to the second block. Work activity is manifested in such indices as work productivity, product quality etc. Job satisfaction is an index of a personal attitude of a subject to his work that is an important condition of employees' efficacy.

There can be distinguished two groups of factors that influence job satisfaction (Shadrikov, 2004). The first has an impact on organizational relationship, and these are hygienic factors, labour organization, the schedule of work, provision with privileges (Bureau et al., 2018). The second group is motives and it includes satisfaction of internal needs, in particular acknowledgement of job achievements, deep integration to the essence of labour activity, responsibility, and initiative. As individual psychological characteristics having some impact on job satisfaction cognitive abilities, work congruence, meaning the possibility to make use of all knowledge and skills, the correspondence of work requirements to

abilities as well as emotional stability and adaptation mastery are viewed (Kobets, 2012; Kulwinder, 2011; Tabakova, 2006; Tatyanenko, 2011; Voilokova, 2007).

In our research we put the goal to specify in what way individual psychological characteristics of representatives of the group of professions "person – technics", in particular high indices of technical and emotional intelligence as well as tolerance to ambiguity, are connected with job efficacy and satisfaction. Our expectations as for such a connection grounded on the statement according to which dominance of certain individual psychological characteristics of representatives of the group of professions "person – technics" influence specifics of their job satisfaction and efficacy in different ways.

According to our hypothesis, workers with high indices of technical and emotional intelligence and tolerance to ambiguity are also typical of high levels of job efficacy and satisfaction.

To test these hypotheses, we created a sample of research participants out of Regional Gas Company "Dniprogaz" of Dnipro city division, men aged from 30 and 45. Total number of respondent craftsmen engaged in repairing and maintenance of gas equipment completed 40 subjects. The research was carried out in group form. The respondents were informed about the aim of the research and received explanations as for instructions for all questionnaires. In order to increase reliability of results, the research was carried out anonymously, and the subjects were asked to indicate only their age, sex, and initials. To eliminate the subjectiveness factor in evaluation of own efficacy by the respondents, we additionally asked direct managers of these employees to participate as experts as the respondents views on themselves and their managers' opinions could differ.

To test hypotheses empirically, the following questionnaires were chosen: Job Satisfaction Survey by P. Spector, Job Involvement Questionnaire by N. Kanungo, the test created by the HR-manager of "Dniprogaz" M. A. Shevchenko (for evaluation of employees); the Bennett Mechanical Comprehension test, Multiple Intelligences Test by H. Gardner; "New Questionnaire of tolerance or intolerance to ambiguity" by T. V. Kornilova.

We carried out ρ -Spearman's correlational analysis and found relationship between the indices of individual psychological characteristics and specifics of job satisfaction and efficacy. The indices of total employee's efficacy and job satisfaction were used in the research. The index of "total efficacy" was calculated as the sum of the employee's own efficacy estimation and such estimation made by his or her direct manager. The index of "total satisfaction" was found as a sum of additives defined by "Job Satisfaction Survey". The results of empirical data as the data of correlational analysis are given in Table 1.

Table 1 illustrates meaningful relationship between estimation of job efficacy and total job efficacy of respondents with their types of intelligences. The high level of technical abilities of professionals is connected with the high level of their total efficacy (ρ = .898 at p≤ .001) and job satisfaction (ρ = .925 at p≤ .001). We also found the relationship between the level of logical-mathematic intelligence according to Gardner's test and job satisfaction (ρ = .817 at p≤ .001) and job efficacy (ρ = .809 at p≤ .001). This is also typical of visual-spatial intelligence: the connection with job efficacy is ρ = .759 at p≤ .001 and with job satisfaction ρ = .798 at p≤ .001. These results show that the higher the level of technical abilities is, the more repondents are satisfied with their work as it corresponds to their abilities, and the higher their efficacy is estimated.

One can also note that professionals with the higher level of linguistic abilities are less satisfied with work (ρ = -.378 at p≤ .05) and are worse estimated in efficacy by their managers (ρ = -.452 at p≤ .01). Our results coincide with the views of V. Shadrikov (Shadrikov, 2004) as for the influence of a subject's individual characteristics on his work effectiveness and of E. Klimov as for the phenomenon of jobs division by abilities (Klimov, 1996.

This is vital to point out that there is straight correlation between the indices of intrapersonal intelligence and efficacy estimation made by managers (ρ = .557 at p \leq .001) and job satisfaction (ρ = -.563 at p \leq .001). We can hypothesize that respondents with the higher level of intrapersonal intelligence even in a very stressful situation demonstrate a higher abilitity to keep calm and solve problems that helps them do their production tasks better and is better estimated by their managers.

Table 1

The specifics of the relationship between types of intelligence and job satisfaction and efficacy of "person – technics" group of professions representatives

	st	Multiple Intelligences Test							
	The Bennett Test	Linguistic	Logical- Mathematic	Visual-Spatial	Music	Interpersonal	Intrapersonal	Kynesthetic	
Total efficacy	.898***	45**	.809***	.759***	17	.353*	.557***	.266*	
Total satisfaction	.925***	37*	.817***	.798***	17	.369*	.563***	.316*	
* <i>at</i> $p \le .05$;	**p≤	.01;	**:	*p≤.001			1		

Table 2 shows that as for the importance of developed technical abilities in the work of this type of professionals the views of managers coincide with those of employees themselves. We also found meaningful reverse correlations between the level of linguistic intelligence and parts of job efficacy. Moreover, both employees and their managers state there is a connection between the development of interpersonal intelligence of a technical specialist and his or her efficacy.

When looking at the results given in Table 3 one may see the relationship of the level of technical abilities according to Bennett test and logical-mathematic and visual-spatial intelligences by Gardner test with such parts of job satisfaction as salary, advancement in career, additional privileges, rewards, and the character of work.

Table 2

The specifics of relationship between parts of efficacy estimation of "person technics" group of professions representatives and their types of intelligence

Efficacy estimation		ical st	Multiple Intelligences Test						
		The Bennett Mechanical Comprehension test	Linguistic	Logical-Mathematic	Visual-Spatial	Music	Interpersonal	Intrapersonal	Kynesthetic
	Competence	.536***	039	.466**	.338*	.2	.185	.3*	.272
Employee's estimation	Responsibility for work quality	.304*	.2	.3*	.204	.117	.023	.146	.062
ee's e	Discipline	.337*	029	.329*	.336*	.3*	.231	.486**	.001
mploye	Strive for self- perfection	.463**	093	.517***	.343*	.028	.134	.464**	.39*
Щ	Orientation on customer	.291*	185	.219	.041	.095	.057	.266	177
	Initiativeness	.607***	.012	.456**	.444**	.063	.313*	.446**	.141
	Competence	.847***	338*	.837***	.758***	135	.315*	.552***	.316*
Manager's estimation	Responsibility for work quality	.72***	5***	.604***	.664***	161	.284	.507***	.207
ır's e	Discipline	.514***	16	.573***	.66***	001	.072	.463**	.308*
Manage	Strive for self- perfection	.868***	5***	.759***	.768***	184	.369*	.484**	.263
	Orientation on customer	.607***	4**	.608***	.662***	226	.356*	.119	.127
	Initiativeness	.779***	305*	.636***	.714***	.008	.361*	.509***	.186
*	<i>at</i> $p \le .05$;	** <i>p</i> ≤.01;		***p≤.	001			•	

This can be explained with the fact that such employees thanks to their features have additional advantages in further development in their profession, promotion, they more often get financial rewards and acknowledgement for wel done job, and the character of their work corresponds to their abilities. It is important to stress the presence of reverse correlations between the level of technical specialists' linguistic intelligence with satisfaction with the character of work and rewards depending on different factors (financial rewards to well done job, financial premium for winning professional competitions etc.). Such employees dislike their work as it is.

The next step of the analysis of our results was learning the relationship between respondents' job efficacy and job satisfaction with their tolerance to ambiguity.

Table 3

	ical st	Multiple Intelligences Test							
Components of job satisfaction	The Bennett Mechanical Comprehension test	Linguistic	Logical-Mathematic	Visual-Spatial	Music	Interpersonal	Intrpersonal	Kynesthetic	
Salary	.515***	218	.442**	.403**	.154	.178	.493**	.085	
Advancement in career	.623***	258	.548***	.619***	.057	.273	.36*	.524***	
Management	.3*	.04	.186	.42**	.197	.271	.228	.085	
Additional privileges	.814***	3*	.678***	.658***	227	.462**	.451**	.261	
Rewards depending on different factors	.862***	41**	.8***	.738***	2	.323*	.53***	.226	
Working conditions	.103	.092	.302*	.203	18	.085	.351*	.131	
Colleagues	.114	.085	.073	.093	005	.021	.463**	.219	
Character of work	.882***	39*	.788***	.773***	146	.3*	.4	.372*	
Information	.092	.383*	.063	.118	2	.11	.087	.022	

The specifics of the relationship between the types of intelligence and components of job satisfaction of specialists of technical group of professions

* at $p \le .05;$

***p≤.001

**p≤.01;

Table 4

The specifics of the relationship of respondents' job efficacy and job satisfaction with tolerance to ambiguity

	Tolerance to ambiguity	Intolerance	Interpersonal intolerance to ambiguity
Total efficacy	.516***	473**	315*
Total satisfaction	.427**	17	216
* at p≤ .05;	**p≤.01;	***p≤.001	

We can see from Table 4 that there is a direct relationship between indices of the level of tolerance to ambiguity and job satisfaction (ρ = .427 at p≤ .01) and job

efficacy (ρ = .516 at p \le .001). It means that for technical personnel the higher the level of their tolerance to ambiguity is, the more they are satisfied with their work and more efficient.

Table 5 illustrates the relationship of tolerance to ambiguity with estimation and self-estimation of efficacy of technical specialists. The higher tolerance to ambiguity is, the more efficient specialists estimate themselves and are estimated by their managers (ρ = .441 at p≤ .01 and ρ = .48 at p≤ .01).

Table 5 shows that there is reverse relationship between manager's evaluation of an employee's efficacy and his ambiguity tolerance (ρ =- .393 at p≤ .05) as well as responsibility for work quality (ρ =- .589 at p \leq .001). Thus, the higher specialists ambiguity tolerance is, the more they are satisfied with work and efficient. These data correspond to the views of O. S. Tchougounova as for the importance for technical specialists of strive for change, novelty, originality, giving priority to more complex tasks, possibility of independence and going beyond accepted limitations which stand for tolerance to ambiguity (Tchougounova, 1983).

Table 5

The specifics of the relationship of the components of efficacy estimation with ambiguity tolerance and types of intelligence of "person - technics" group of professions representatives

		Tolerance to ambiguity	Intolerance	Interpersonal intolerance to ambiguity
_	Competence	.441**	14	048
Self-esteem	Responsibility for work quality	.155	.141	.142
f-est	Discipline	.369*	.182	.047
Sel	Strive for self-perfection	.307*	.003	069
	Orientation on customer	.015	.095	.03
	Initiativeness	.169	078	236
y	Competence	.48**	393*	283
on b	Responsibility for work quality	.573***	589***	216
Estimation by managers	Discipline	.484**	.004	.012
Estin nane	Strive for self-perfection	.502***	242	336*
	Orientation on customer	.518***	098	236
	Initiativeness	.421**	282	114
*at $p \leq .0$.	<i>5;</i> ** <i>p</i> ≤.01; **	*p≤.001	•	

Table 5 shows that there is reverse relationship between manager's evaluation of an employee's efficacy and his ambiguity tolerance (ρ = -.393 at p≤ .05) as well as responsibility for work quality (ρ = -.589 at p \leq .001). Thus, the higher specialists ambiguity tolerance is, the more they are satisfied with work and efficient. These data correspond to the views of O. S. Tchougounova as for the importance for technical specialists of strive for change, novelty, originality, giving priority to

^{***}p≤.001

more complex tasks, possibility of independence and going beyond accepted limitations which stand for tolerance to ambiguity (Tchougounova, 1983).

The following step was to learn possible relationship between repondents' job satisfaction and their tolerance to ambiguity. The results are given in Table 6.

Table 6

	Tolerance to ambiguity	Intolerance	Interpersonal intolerance to ambiguity		
Salary	.231	.065	155		
Promotion	.286	.067	042		
Management	.129	.147	.017		
Additional rewards	.289	.129	29		
Rewards not depending on different factors	.472**	359*	132		
Work conditions	.244	109	.126		
Colleagues	.018	026	.108		
Character of work	.546***	23	298		
Information	208	.369*	.013		
Total satisfaction	.427**	17	216		

The specifics of the relationship between satisfaction with professional activity and respondents' tolerance to ambiguity

We can see direct relationship between craftsmen's level of tolerance to ambiguity and their job satisfaction. So, the higher their tolerance to ambiguity is, the more they are satisfied with work (ρ = .427 at p≤ .001) especially with such its aspect as character of work (ρ = .546 at p≤ .001). There is a relationship between information as an aspect of job satisfaction and ambiguity tolerance (ρ = .369 at p≤ .001) that may indicate on the ability of emotionally stable employees to work under conditions of restricted access to information.

Conclusions. High level of general and technical intelligence, good attention, and operativeness refer to the set of individual psychological characteristics of a personality that are meaningfully related to the efficacy of professional activity of representatives of "person – technics" group of professions. As the result of our research we found a direct relationship between high levels of technical abilities, logical-mathematical and visual-spatial intelligences after H. Gardner and job efficiency and job satisfaction. So, the higher the specialists' level of technical abilities is, the more they are satisfied with work as it corresponds to their skillfulness.

Tolerance to ambiguity as a generalized personality characteristics is an important feature of representatives of "person – technics" group of professions. It stands for a subject's ability to be independent and get out of the limits of accepted limitations, to give priority to more complex tasks, and to be able to act under conditions of unforeseen circumstances. We found that the higher the level of

specialists' ambiguity tolerance, the more they are satisfied with work and more efficient. We see the *perspectives of further research* is understanding the structure of technical specialists' motivation and constructing the system of their organizational (technical in particular) education.

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УДК 159.9

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SPECIFIC CHARACTER OF CONNECTION BETWEEN PERSONAL CHARACTERISTICS AND LONELINESS EXPERIENCE OF MATURE-AGED MEN

Анотація. Проаналізовано феномен самотності, описано види самотності (дисоційована, дифузна та відчужуюча), її типи (негативна та позитивна, хронічна та ситуативна), глибину, рівні та причини виникнення. Наведено результати емпіричного дослідження специфіки зв'язку особистісних характеристик та переживання самотності чоловіками зрілого віку. Виявлено наявність позитивного кореляційного зв'язку між особистісними характеристиками й глибиною переживання самотності, видами та рівнем суб'єктивного переживання самотності.

Ключові слова: самотність, суб'єктивне відчуття самотності, негативна та позитивна самотність, ситуативна самотність, особистісні характеристики, особи зрілого віку.

Аннотация. В статье представлены результаты теоретического анализа феномена одиночества и эмпирического исследования специфики связи личностных характеристик и переживания одиночества мужчинами зрелого возраста. Выявлена положительная корреляционная связь между личностными характеристиками одиноких мужчин и глубиной переживания одиночества, видами и уровнем субъективного переживания одиночества.

Ключевые слова: одиночество, субъективное ощущение одиночества, отрицательное и положительное одиночество, ситуативное одиночество, личностные характеристики, лица зрелого возраста.

Articulation of the issue. The development of the modern social space is characterized by the tendency to increase the number of lonely individuals of mature age, noted by the authors, which is conditioned by real or imaginary communicative deprivation (isolation from other people, disruption or absence of significant social relationships, lack of communication), personal and situational changes, tendency to isolation, indicating the importance of the detailed study of the problem of loneliness as a psychological category.

The urgency of a comprehensive scientific understanding of the complex phenomenon of male loneliness is dictated by the fact that, in spite of the broader circle of communication and the less significant importance of interpersonal

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Psychological characteristics of representatives of «person – technics» group of professions as a factor of job satisfaction and efficacy

Background. Representatives of «person – technics» seem to be a not investigated enough sample in domestic psychology as for the factors of their efficacy and job satisfaction. There are some expectations which seem to be obvious yet we have not found their empirical verification.

The objective of the research is to determine the specifics of the connection of job satisfaction and efficacy with individual and psychological characteristics of representatives of the group of professions «person – technics» on the example of craftsmen responsible for repairing and maintenance of gas equipment.

Method. To test hypotheses empirically, the following questionnaires were chosen: Job Satisfaction Survey by P. Spector, Job Involvement Questionnaire by N. Kanungo, the test created by the HR-manager of «Dniprogaz» M. A. Shevchenko (for evaluation of employees); the Bennett Mechanical Comprehension test, Multiple Intelligences Test by H. Gardner; «New Questionnaire of tolerance or intolerance to ambiguity» by T.V. Kornilova. A sample of 40 research participants ans 4 their managers out of Regional Gas Company «Dniprogaz» of Dnipro city division, men aged from 30 and 45, was collected. P-Spearman' s correlational analysis was carried out.

Results. A direct relationship between high levels of technical abilities, logicalmathematical and visual-spatial intelligences after H. Gardner and job efficiency and job satisfaction was found. The higher the specialists' level of technical abilities, the more they are satisfied with work as it corresponds to their skillfullness. The higher the level of spesialists' ambiguity tolerance, the more they are satisfied with work and more efficient.

Conclusions. High level of general and technical intelligence, good attention, and operativeness refer to the set of individual psychological characteristics of a personality that are meaninfully related to the efficacy of professional activity of representatives of «person – technics» group of professions. Tolerance to ambiguity as a generalized personality characteristics is also an important feature of representatives of «person – technics» group of professions.

Keywords: individual characteristics, job satisfaction, performance evaluation, representatives of the group of professions «person – technics».