

PSYCHOLOGICAL PREDICTORS OF SUCCESS FOR ROMANIAN OFFICERS APPLYING FOR DEFENCE ATTACHE' POSITION

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ABSTRACT

The scores of an enlarged, complex selection battery (15 ability and personality tests) have been correlated with the marks obtained by the officers participating in the competition-(exam) for becoming military representatives of Romania abroad.

This correlation has been done within concurrent validation study attended by a-sample of 42 officer candidates.

Out of 79 test scores and non-test data, 38 have been validated with criterion data (the final competition mark, the mark obtained for the special training, the mark for the foreign language and the mark military and political analysis) by linear, simple and multiple correlation.

The multiple correlation coefficients between the predictor information and the four criterion data are in the .76 to .88 range compared to $p > .001$.

By calculating the global predictive indicators related to the four criterion data the psychological exam may become a psychometric composite strategy from a clinic composite one in decision making.

I. INTRODUCTION

Diplomatic missions abroad are thought by Romanian Armed Forces and other countries' Armed Forces to be very complex activities requiring special mental and personality qualities in the officers who are assigned to such exceptional missions.

This is why many modern armed forces use psychological and knowledge tests to select, based on skill and competence criteria, officers - candidates for vacant diplomatic positions abroad. Of course, they should have graduated specialty post-university courses.

In order to improve psychological tests for selection of officers for this type of missions specialized departments were established at our Armed Forces level too. They are manned with graduated psychologists, civilians and military. They participate in the evaluation and development of test batteries able to predict professional performance of personnel with special duties and missions, and directly contribute to the officer selection for being trained and conducting special missions.

One of the operational methods for establishing predictive value of the psychological exam for officer selection for diplomatic missions abroad is studying the local validity of indicators belonging to aptitude and personality tests related to the results of knowledge and specialty expertise exams.

In other words, by establishing psychological correlates of success for officers - candidates to the competition for diplomatic positions abroad - contribution of psychological exam to prediction of professional performance and improvement of selection as far as these military professionals are concerned may be evaluated.

II. OBJECT AND METHODS

An initial enlarged and complex battery comprising 15 aptitude and personality test including 76 test-indicators was applied for officers participating in the competition for becoming military diplomatic representatives of Romania abroad during the last two years.

Psychological exam goes before knowledge exam and lasts for three days (during the first day collective written paper - 6 hours - is organized and during the following two days individual exams - 1 1/2 hours per candidate - are taking place). Psychological test results are included in the notification of fit/unfit for permanent military diplomatic representation mission abroad and in the predictive notification representing an estimation of the psycho-aptitude background for such missions.

Given that officers participating in the competition for becoming military representatives should meet preliminary conditions regarding age, education, evaluation report, health and welfare report, officers obtaining low scores and evaluations at psycho-aptitude and personality tests, making them unfit for such missions are few (Unfit notification is very rare but not impossible taking into dynamics of individual mental condition and performance under stress specific to the competition.)

On the other hand, officers participating in such competitions are previously selected, based on psychological tests, for manning operational-informative departments or for participating in specific training activities. They belong to all types of specialties and arms and they are between 35 and 51 years old.

Psychological exam at this level faces the "dwindle of the crowd" effect, well known in the occupational selection activity. In this case, test battery should be analysed in the light of its diagnostic and predictive capabilities for the groups of previously selected individuals homogenized as far as mental aptitude issue is concerned (1).

In such situations validation of psychological test battery results only from a predictive local variation based on immediate professional success criteria (pass in the knowledge and expertise test for professional positions).

For investigating diagnostic and predictive value of the test battery used in psychological examination of officers - participation in the competition for becoming permanent diplomatic representatives of the Romanian Armed Forces abroad - a sample group of 42 individuals was used. They completed the whole knowledge test with the following criteria indicators of stress:

- 1 - Final competition mark (FCM)
2. -Basic political-military training mark (PMTM)
3. Specialty training mark (STM)
4. Foreign language mark (FLM)

The four criteria indicators of success were converted from marks (from 1 to 10 with two decimal fractions) into T distributive marks for the sample group of officers (N=42).

The same method was used for test and non-test scores of the psychological exam in order to have the same measure for statistical correlation calculation (Person correlation coefficient and multiple correlation coefficient).

Psychological exam included initially an extended test and test indicator battery comprising:

- 7 *general and specific aptitude test providing 18 test-indicators* (1, GI - general intelligence, 2 GVA - general verbal aptitude, 3 DA - distributive attention Prague, 4. CA - concentration ability, 5 RIS - test of resistance to informational stress, 6. VA - verbal - associative test, 7 VC - verbal creativity)

8 *personality tests providing 58 test-indicators* (1.FPI - Freiburg questionnaire including 12 scales, 2. EPQ - Eysenck questionnaire including 5 scales, 3. PQ-14 F-personality questionnaire based on Melnikov and Iampolski including 14 personality factors, 4. T-temperament questionnaire based on Rusalov and including 9 scales, 5.MBTI-Myer Briggs preference typological indicator including 8 scales, 6. R-Rosenzweig frustration test adjusted for collective use and providing 7 indicators, 7. IE-questionnaire for locus of control, based on Potkay and Allen, 8. IE-CT questionnaire for locus of control and resistance to rumors including 2 scales and based on Septimiu Chelcea)

All personality tests were standardized by us and adjusted for data scanning according to answer sheets and their PC processing.

Psychological exam also included clinical methods providing integrative data and non-test information such as:

- anamnestic record and individual interview
- observation of verbal and non-verbal behaviour
- projective test: tree test based on Koch, pulsation test based on Szondy
- analysis and synthesis of general psychometric data and qualitative data

Psychological committee gave each individual three marks with two decimal fractions for the following:

1. general intellectual potential (GIP)
2. personality coefficient (PC)
3. psychological examination mean (PEM) given by $GIP + PC/2$

In order to determine the three indicators' predictive value as to the success in knowledge exam, they were converted into T distributive marks for the sample group.

76 test indicators and 3 non-test indicators, with predictive value, of the psychological exam went through simple and multiple linear correlation calculations involving the four criteria-indicators of success in competition for the vacant military diplomatic representative positions.

III RESULTS AND CONCLUSIONS

Out of the total number of 76 indicators and 3 non-test indicators of the psychological exam the following indicators were validated as a result of simple and multiple linear correlation coefficient calculation involving each of the four criteria of success in competition:

1. 16 test-indicators (predictors) provided by 3 aptitude tests (GI, GVA, DA) out of 7 tests
2. 19 test-indicators (predictors) provided by 6 personality tests (FPI, PQ-14 F, EPQ, T, MBTI, R) out of 8 personality tests;
3. 3 non-test indicators representing general estimations under the form of marks (from 1 to 10) given by the psychologists proved to be predictive compared to analyzed criteria

38 test and non-test predictors of the psychological exam that concurrently met the following two conditions were registered (out of the total number of 79 indicators initially checked)

1. to be significantly correlated in a $p = .05$ with at least one of the four criteria of success (Pearson correlation coefficient values are between $.28 - .64$); the most stable predictors (GI-V -verbal intelligence, FPI-E - extraversion, GIP-psychologist mark for intellectual potential) simultaneously correlate with up to 3 success criteria
2. to form a combination of R multiple correlation with at least one of the 4 success criteria at significance level $p = .001$ (R^2 determination coefficients cover at least 59% of variation)

In Tables 2 through 5 optimal combinations of the 38 predictors or the psychological exam are presented. Multiple regression equation factors needed in predictive indicator calculation (in T marks) are shown: multiple correlation coefficients for validation of selection battery and prediction of success for Romanian officers applying for defense attache position (Table 1), psychological correlates of the final competition mark (Table 2) of the military and political analysis mark (Table 3), of the specialty training mark (Table 4) and of the foreign language mark (Table 5).

Table 1

**MULTIPLE CORRELATION COEFFICIENTS FOR VALIDATION OF
PSYCHOLOGICAL SELECTION BATTERY AND FOR PREDICTION OF SUCCESS
FOR ROMANIAN OFFICERS APPLYING FOR DEFENSE ATTACHE' POSITION**

No.	Criteria of success	No. of predictor variables	Multiple correlation coefficients	Multiple determination coefficients
1	Final competition mark	12	.88	.77
2	Mark for basic political-military training	10	.80	.64
3	Mark for specialty training	11	.76	.58
4	Mark for foreign language	9	.76	.58
		Note n= 42 p= .001		

Table 2

PSYCHOLOGICAL CORRELATES OF THE FINAL COMPETITION MARK

N= 42 R= .88 R²= .77 p= .001

I. APTITUDE TEST SCORES

No.	Test symbol	Predictor variables	Pearson correlation coefficients	Significance level p.	Beta weights
1.	GI-V	Verbal intelligence	.64	.001	.417
2.	GI-T	General intelligence	.48	.001	-.112
3.	GVA-3	Logical sentence arrangement	.48	.001	.229
4.	GVA-5	"Decoding" foreign language	.38	.005	.344

II. Personality test scores

5.	FPI-E	Extraversion	.50	.001	.318
6.	EPQ-P	Psychotism (tough-mindedness)	.41	.005	.253
7.	FPI-FD 9	Open nature	.39	.01	.325
8.	FPI -NI	Nervous	.34.	.02	.212
9.	R-NP	Need persistence	.34	.02	.146
10	EPQ-C	C scale from Eysenck	.29	.05	-.403

III. APPRAISAL PSYCHOLOGIST MARK

11.	MIP	Mark for intellectual potential	.49	.001	-.483
12.	PEM	Psychological examination mean	.38	.01	.491
		CONSTANT - 37.791			

In order to calculate the predictive mark for criterion (PMC), the following general relationship is used:

$$PMC = K + \Sigma (P_i \times \beta_i)$$

where P_i = predictive test scores (measured in T distributive mark); β_i = beta weights; N = number of predictors; K = constant value

Table 3

PSYCHOLOGICAL CORRELATES OF BASIC POLITICAL-MILITARY TRAINING MARK

N = 42 R = .80

R² = .64

P = .001

I. APTITUDE TEST SCORES

No	Test symbol	Predictor variables	Pearson correlation coefficients	Significance level p	Beta weights β
1.	GI-V	Verbal intelligence	.44	.005	.398
2.	GVA-1	Synonymous word ability	.44	.005	.225
3.	DA	Distributive attention	.36	.02	.156
4.	AVG-5	"Decoding" foreign language	.36	.02	.260
5.	GI-T	General intelligence	.33	.02	-.483
6.	EPQ-P	Psychotism (tough-mindedness)	.56		.289
7.	R-NP	Need persistence	.45		.325
8.	FPI-E	Extraversion	.37		.208
9.	R-ED	Ego defense	-.34		.121
10.	T-CR	Communicat. rate	.30		.202
		CONSTANT - 34.820			

Table 4**PSYCHOLOGICAL CORRELATES OF THE SPECIALTY TRAINING MARK**N=42 R=.76 R² = .58 P=.001**I. APTITUDE TEST SCORES**

No	Test symbol	Predictor variables	Pearson correlation coefficients r	Significance level p	Beta weights β
1.	GVA-3	Logical sentence arrangement	.36	.01	.123
2.	GVA-T	General verbal ability	.31	.05	-2.498

II. PERSONALITY TEST SCORES

3.	FPI-E	Extraversion	.37		
4.	FPI-N1	Nervous	.37	.01	.150
5.	MBTI-F	Feeling	.37	.05	-.104
6.	PQ-14F-C ₄	Conscientiousness	.36	.02	.125
7.	MBTI-T	Thinking	-.32	.05	-.245
8.	PQ-14F-P ₂	Psychotism (tough-mindedness)	.30	.05	.207

III. APPRAISAL PSYCHOLOGIST MARKS

9.	AM	Average mark	.37	.01	-2.498
10.	MIP	Mark for intellectual potential	.33	.05	1590
11.	MP	Mark for personality	.30	.05	1.826

CONSTANT - 29.715

Table 5.

PSYCHOLOGICAL CORRELATES OF FOREIGN LANGUAGE MARKN=42 R= .76 R² = .58 P= .001

No.	Test symbol	Predictor variables	Pearson correlation coefficients	Significance levels p	Beta weight β
1.	GI-V	Verbal intelligence	.50	.005	.440
2.	GVA-4	Meaning of proverbs	.42	.005	.122
3.	GVA-T	General verbal ability	.36	.02	-.309
4.	GVA-3	Logical sentence arrangement	.34	.02	.289
5.	GVA-2	Finding common word ending	.28	.05	.251
II. PERSONALITY TEST SCORES					
6.	FPI-D3	Depression	.44	.005	.44
7.	T-L	Lie scale (social desirability)	-.42	.005	-.429
8.	T-EPC	Energy power in communicat.	.37	.01	.289
III. APPRAISAL PSYCHOLOGIST MARK					
9.	MIP	Mark for intellectual potential	.37	.02	
CONSTANT 19.489					

Conclusion of the validation study was that 3 general and specific (intellectual performance) tests and 6 personality tests have an essential contribution to prediction of success for officers - candidates participating in the competition for becoming military diplomat representatives of Romanian Armed Forces abroad.

An increase of validity and informative value of personality factors compared to the aptitude factors in the prediction of success for this military personnel category is evident. We also recorded this phenomenon during other validation studies (2). In the reference on the subject law level (from .15 to .20) predictive validation values were reported for personality tests (3).

There are civilian studies indicating increased validity indicators for personality tests (questionnaire and projective types) for leader positions. This is why we believe that personality tests' usefulness in officer selection may be much greater than average values for other occupations suggest.

The final battery obtained as result of validation study decreases period of the psychological exam and therefore it saves time, is more operational, and efficiency of prediction for success of officers - candidates participating in the competition for becoming military diplomatic representatives increased.

Validation study has provided the grounds for transition in the context of the psychological exam, from decision-making strategy of composite clinical type (frequently used for military personnel selection today) to a composite psychometric strategy reuniting and combining, according to well-defined rules such as multiple regression equation, data collected based on estimation and test-information. This requires more complex actions. Comparative research results indicate the latter strategy superiority (5).

During our research, the composite psychometric strategy application in the selection decision-making process was accomplished by calculating prediction indicators for the 4 criteria of success in competition for candidate officers.

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