Personal Determinants of Attitudes Toward Psychological Tests

Agnieszka Lipińska-Grobelny[109], Beata Ścierwicka
Institute of Psychology, University of Lodz

Key words: psychological test, attitude toward tests, personal determinants, regulation theory of temperament, anxiety state and trait, emotional intelligence, locus of control.

Introduction

In 1938, Henry Murray claimed in his book *'Explorations in Personality'* that psychological tests are not able to assess the complex human nature, and 50 years later J.P. Guilford wrote that: *'tests constitute the achievement of psychology that has evoked the greatest social reaction'*. On the other hand, *'No other technique or psychological theory has been elaborated so well from the mathematical point of view'* (Guilford, 1988, p.9).

At the present time, psychological tests play an important role in measurement of differences among people or among a person's reactions in varied situations. They are used not only in education, but also in the army, career guidance, personal counselling, medicine, or psychotherapy. This diversity of applications leads to the danger of appearance of methods that imitate for example personality questionnaires or intelligence tests. Thus, it may be asked what a psychological test is and what criteria must be fulfilled to qualify a particular tool to this category. J. Brzeziński and E. Hornowska (2000) give a definition of a psychological test and also enumerate its typical features. *'Firstly, it is a set of varied items (tasks, questions, drawings, words, symbols, etc); secondly, these items constitute a sample that renders it possible – on the basis of answers – to draw conclusions regarding an examinee's behaviour in non-test situations; thirdly, the procedure of its use is standardised and objective; fourthly, it fulfils some defined criteria of psychometric goodness, including especially its reliability and validity'* (Brzeziński & Hornowska, 2000, p.401).

[109] Agnieszka Lipińska-Grobelny, Institute of Psychology, University of Lodz, Department of Social, Organisational, and Career Guidance Psychology, 10/12, Smugowa St., 91-433, Lodz, e-mail: agalg@poczta.onet.pl

It is worth mentioning that psychological tests do not constitute a homogenous group. They differ as far as the way of construction, rules of application or finally type of measured behaviours are concerned. J. Brzeziński (1996) describes two basic classifications of psychological tests. The first one applies to the examination subject and it allows for distinguishing ability tests (*i.e*. general intelligence tests and special abilities tests), personality tests, and knowledge tests. The second classification is related to the type of behaviour that is engaged in a given test. In this case there are listed verbal tests, task tests, and projective tests. The two classifications may be crossed, which effects in mixed combinations, for example personality tests may be verbal or projective. However, independently from a test type, every good psychological test should be reliable, valid, standardised, objective, and based upon norms.

The subject of the studies presented in this article consists in analysis of participants' attitudes toward tests and defining variables that may determine these attitudes. Psychological tests have never been and are not liked by potential examinees. Many candidates to a job experience strong anxiety while starting test examination because their refusal to take part in the examination means resigning from applying to a particular job and the examination result determines their future. The strongest anxiety is characteristic for women and older candidates to a job, while men and younger persons feel less anxious (Arvey, Strickland, Drauden & Martin, 1990). Negative attitudes to tests are generally displayed by union members, who believe that such an examination serves an employer only, and does not serve an employee (D. P. Schultz & S. E. Schultz, 2002). R. D. Arvey, W. Strickland, G. Drauden and C. Martin (1990) proved that a given attitude to test examination may be responsible for differences in results obtained by examinees. They claim that an attitude toward tests exerts a greater influence upon the level of its completion than an examinee's physical or cognitive capacities do. This conclusion was drawn on the basis of results obtained by 301 candidates to a post in traffic control at motorways. The study participants completed three other job tests beside the Attitude Questionnaire. The similar procedure was applied to 179 persons already employed at the given post; these persons were informed that the tests results would not influence their salary or employment conditions. Significant differences between the groups were revealed for seven out of nine results. As compared to those already employed, candidates applying for the job displayed higher motivation, effort, preparation and conviction that the tests may be decisive for their future.

In literature there are mainly reports on the influence of anxiety reaction upon test situation, or the influence of attitude to examination upon the level of test completion. In this case it has been decided to analyse some variables that may determine attitudes to tests, because it is expected that obtained results will contribute to some improvement in examination procedure, which will lead to increase in reliability of test examinations.

Subject of the study

The objective of the research makes it necessary to define two key notions – the term of 'an attitude' and the selected 'personal determinants of attitudes'; the term of 'a psychological test' has been already defined. The pioneer of Polish social psychology, S. Mika (1982, p. 116) defines an attitude as '*a relatively stable structure (or disposition for the structure to appear) of cognitive and emotional processes and behavioural tendencies, in which a given approach to a particular subject is expressed*'. E. Aronson, T. D. Wilson and R. M. Akert (2006, p. 313) also claim that an attitude is '*a stable evaluation – a positive or a negative one – of people, objects, and ideas*'. Thus, defining one's attitude, for example an attitude toward a psychological test, means situating the person at a bipolar continuum, from an extremely negative attitude toward test examination to an extremely positive one, and the most important characteristics of an attitude to tests will comprise mainly its sign (positive or negative) and its intensity (higher or lower). Although there are also enumerated other characteristics, such as importance, scope, complexity, function, yet in a majority of concepts only sign and intensity of an attitude are taken into account, which is also visible in the current study. Moreover, it ought to be noted that the three components of an attitude, marked in the definition by S. Mika (1982), are rarely displayed in empirical data, because relations among emotional, cognitive, and behavioural components of an attitude are often weak and dependent on numerous factors (Wojciszke, 2001). Thus, a particular attitude may be related to one component more than to another one. The analyses carried out in the present article show that an attitude to psychological tests is based mainly upon cognition and emotions. This means that a function of such an attitude lies in classifying benefits and loses of being subjected to test examination. If a person notices more pluses, for example gaining a good result, a way to get to know oneself and to strengthen one's self-esteem, or getting a desired job, then the attitude to tests is more positive. The second component of an attitude to tests that was distinguished in factor analysis – the emotional component – implies that in this case cognition is dominated by emotions and values. The group of participants in this project comprised students, whose emotional, positive attitude to tests might be influenced for example by the effect of mere exposition.

An important issue related to attitudes is their genesis. Attitudes may be formed on the basis of the following mechanisms: a) the effect of mere exposition, in which positive feelings toward people or subjects grow proportionally to frequency of their exposition, b) learning through associations, *i.e*. classical and instrumental conditioning, c) our own behaviours toward an object, *i.e*. if we behave in a positive way toward an object, this behaviour becomes a reason to conclude that our attitude to the object is positive, and finally d) convictions about an object and partial evaluations that are implied by them. Environment of an individual's life and their closest surroundings present a significant determinant of an attitude's development. The key

role in attitudes formation is played by parents, both their own attitudes and educational methods they use, which often leads to similarities between attitudes of children and those of their parents (Wojciszke, 2001).

Factors that determine social attitudes certainly include some temperamental dimensions which are responsible for effective regulation of stimulation. Temperament characteristics belong to those personality traits which start at the earliest and thus they present a condition which precedes appearance of other phenomena they influence (e.g. attitudes toward tests), so they gain the status of moderators. According to the regulative theory of temperament by J. Strelau (2000), which was used in the present study, reactivity and activity constitute the two basic temperament traits that are responsible for individual differences in energetic characteristics. Reactivity is displayed in reaction intensity, which is relatively stable for an individual and which constitutes one of determinants of sensory sensitivity and efficiency. Activity plays an important role in preserving an optimum level of activation. High level of activity goes together with low level of reactivity, *i.e*. low sensory sensitivity and high efficiency. The formal characteristics of behaviours is completed with two temporal traits. These are perseverance, *i.e*. reaction stability, and briskness, also called mobility, a tendency to change behaviour easily so as to fit it to environmental changes. As it appears from the data presented by J. Strelau (1985), searching for stimulation influences not only formal characteristics of a behaviour (e.g. work style, learning style), but also the contents of the behaviour (e.g. job choice, attitudes to a person or an object). On the basis of the above statements it may be assumed that:

H1: Persons who display a more positive attitude to test examination will have:

a. low reactivity,
b. high activity,
c. low sensory sensitivity,
d. high resilience,
e. low perseverance and
f. high briskness.

Another ‘personal determinant’ of an attitude toward tests my be related to the locus of control. It is certainly an aspect of self-knowledge, or of the notion of oneself, which modifies not only motivation and activity results, but also result expectation (Mądrzycki, 2002). According to Rotter’s theory, there are distinguished two groups of people: individuals who are convinced that their successes and failures depend merely upon fate or some external circumstances (external locus of control) and persons who believe that they decide about their life and fate themselves (internal locus of control). The existing researches show that individuals with internal locus of control search for information that are necessary to solve a problem more actively, use the already possessed data in a more effective way, and they are also more perceptive in a new situation. Thus, those persons may be better at standing a test examination and so they may present a more positive attitude toward it (based

on: Domachowski, Kowalik, & Miluska, 1984). Furthermore, it is evidenced in studies on attitudes changes that persons with internal locus of control are less eager to change their attitudes than persons with external locus of control are. A significant factor that contributed to attitude change in persons with external control was related to the prestige of source of information, while for persons with internal control it was the information contents (Domachowski, Kowalik, & Miluska, 1984). Due to these data, another hypothesis may be formed:

H2: Persons with internal locus of control have a more positive attitude toward tests, as compared to persons with external locus of control.

There is a positive correlation between external locus of control and anxiety, which presents another variable included to the analyses (Domachowski, Kowalik, & Miluska, 1984). In this case, Spielberger's (1966) differentiation between anxiety state and anxiety trait was used. The first factor is responsible for diversity of results in different situations, while the latter is responsible for individual differences. The problem of mutual relations between anxiety state and trait plays an important role in the theory. Individuals with high level of anxiety trait needn't experience a higher level of anxiety state, yet they will present quicker anxiety reactions in situations of a menace, especially a menace to ego, not so much in situations of physical menaces (Wrześniewski & Sosnowski, 1987). A psychological test presents a potential source of menace to ego, thus it may be assumed that:

H3: Persons with high level of anxiety (both anxiety trait and state) have a more negative attitude toward tests, as compared to persons with low level of anxiety.

The set of personal determinants of attitudes toward psychological tests is completed with the variable of emotional intelligence. Originally emotional intelligence was associated with some personality traits. However the concept by P. Salovey and J. D. Mayer was evolving toward the focus on cognitive abilities. The authors limited the range of abilities included within emotional intelligence to the following ones: perception of emotions, use of emotions to improve thinking, understanding emotions, and managing emotions (Jaworowska & Matczak, 2001). It is assumed that especially the second component of emotional intelligence, which applies to using emotions in order to improve attention and logical thinking, is significant for an attitude toward tests. Moreover, an analysis of empirical data renders it possible to point to a relationship between emotional intelligence and anxiety state and trait (a negative relation), and also between emotional intelligence and temperament traits, especially activity and briskness, *i.e*. flexibility of behaviour (a positive relation) (Jaworowska & Matczak, 2001). Thus, the final hypothesis is:

H4: Persons with higher scores on emotional intelligence will have a more positive attitude toward tests, as compared to persons with lower scores on emotional intelligence.

Statistical analyses presented in the further part of the current article include a differentiating variable, namely the faculty. It has been incorporated due to at least two reasons. Firstly, psychology students have frequent contacts with psychological tests

(the effect of mere exposition), which may modify their attitude toward test examination in a significant way; secondly – according to the studies by A. Jaworowska and A. Matczak (2001) – the level of emotional intelligence may be differentiated by the faculty. Moreover, women display higher anxiety of tests than men do, that is why the variable of gender will be the second modifying factor of the personal determinants of attitudes toward tests (Arvey, Strickland, Drauden & Martin, 1990).

Method

The examined group

The research was carried out in a group of 120 persons (57 men and 63 women), aged 22-24. The comparative groups were made of 60 persons from a given faculty, including 26 women and 34 men from management, and 37 women and 23 men from psychology. The obtained results were analysed using SPSS 14.0. programme.

Study techniques

In order to verify the hypotheses, the following psychometrically verified paper-pencil tests were used:

1. *Attitudes Toward Test Scale (SPWT)* by B. Ścierwicka,
2. *Formal Characteristics of Behaviour – Temperament Questionnaire (FCZ-KT)* by B. Zawadzki and J. Strelau,
3. *Delta Questionnaire* for measuring locus of control by R. Ł. Drwal,
4. *Anxiety State and Anxiety Trait Inventory (STAI)* in Polish adaptation by K. Wrześniewski and T. Sosnowski,
5. *Emotional Intelligence Questionnaire (INTE)* in Polish adaptation by A. Ciechanowicz, A. Jaworowska and A. Matczak.

Attitudes were examined with *Attitudes Toward Test Scale* (SPWT), constructed by B. Ścierwicka. It is an experimental version of the scale, it comprises 10 items and measures two components of an attitude toward tests: an emotional component and a cognitive one (a result of analysis of a pile graph and *Matrix of Rotated Factors*). Due to the fact that loadings of particular items were at the level above 0,40, it may be stated that they contributed to the distinguished components quite significantly. The sum of variance explained with the emotional and cognitive components was over 50%, which presents a satisfying result. Persons examined with SPWT respond to the given statements at a five-stage scale where 1 means that a person *strongly disagrees* with the statement, and 5 – that he or she *strongly agrees*. The *Cronbach's alpha* reaches the criterion value for the cognitive component (0,73) and is close to the criterion value for the emotional component (0,64), yet it should be noticed that Cronbach's alpha equal to 0,5 is sometimes referred to as satisfactory, when a scale is short, and *Attitudes Toward Test Scale* (10 items) may be defined as a short one.

In order to diagnose temperament traits the *Formal Characteristics of Behaviour – Temperament Questionnaire (FCZ-KT)* by B. Zawadzki and J. Strelau (1997) was used. The questionnaire consists of 120 items, with 20 items for each of the six scales, *i.e*. briskness, perseverance, sensory sensitivity, emotional reactivity, resilience, and activity. Psychometric parameters of the FCZ-KT Questionnaire that have been verified in numerous researches are satisfactory. *Cronbach's alpha* for particular scales is from 0,73 (*Sensory sensitivity*) to 0,85 (*Resilience*). In studies on relations between traits from the regulative theory of temperament and other dimensions it has been found that the *FCZ-KT* scales display high convergent and discriminative validity.

Delta Questionnaire by R. Ł. Drwal (1995) is based upon the theory of social learning by J. B. Rotter. The instrument is aimed at examining youth from schools and universities. It consists of 24 statements, with 14 items belonging to the locus of control scale and 10 items from the lie scale. The higher is the score on locus of control scale, the stronger external control is characteristic for an examinee. The scales' reliability was assessed using absolute stability (test-retest), *Spearman-Brown's* half test equivalence, and internal consistency according to *Kudera-Richardson's* formula. Validity was assessed by means of comparing the obtained results with scores on *I-E Scale* by J. B. Rotter or through seeking intergroup differences. All these procedures have proved that *Delta Questionnaire* is a reliable and valid device.

Anxiety State and Anxiety Trait Inventory (STAI) in Polish adaptation by K. Wrześniewski and T. Sosnowski (1987) measures anxiety understood as a temporary and situationally determined state of an individual and anxiety meant as a relatively stable personality trait. It comprises two subscales, one is marked with X-1 symbol and used to measure anxiety state, and the other one is marked with X-2 symbol and used to measure anxiety trait. Each subscale is composed of 20 items to be answered by an examinee using 4-point scale. The internal consistency was assessed by means of *Cronbach's alpha* and it equals 0,90 for X-1 scale and 0,88 for X-2 scale. These coefficients render it possible to state that the Polish version of STAI has got high internal consistency and it does not differ from the American version. The theoretical validity of both the subscales has been verified in numerous studies: scores on STAI show significant correlations with results obtained from tools that measure theoretical constructs which are similar to anxiety.

The last test, *Emotional Intelligence Questionnaire (INTE)* in Polish adaptation by A. Ciechanowicz, A. Jaworowska and A. Matczak (the authors of the guide are A. Jaworowska and A. Matczak, 2001) serves to measure emotional intelligence which is defined as the ability to recognise, understand, and control one's own emotions and emotions of other people, and also as the ability to use emotions effectively for management of one's own and others' activities. Reliability has been assessed using internal consistency, *Cronbach's alpha* equals 0,84. The authors of the adaptation were examining theoretical validity by means of searching correlations between scores on INTE and results from other questionnaires, measuring either similar constructs (convergent validity) or different ones (discriminant validity).

Results

Personal determinants of attitudes toward psychological tests

In order to check which of the analysed variables determine attitudes toward psychological tests, the regression analysis was made. The suggested model appeared to be relatively well fitted to the data (F(1,109) = 1,734; p = 0,082), (see table 1). On the basis of the results contained in table 2, it is claimed that perseverance (*Beta* = 0,241) and emotional intelligence (*Beta* = 0,226) explain 14% of variance of attitudes toward tests presented by the examinees. The presence of a statistically significant tendency allows for including one more trait, namely resilience (*Beta* = 0,186), to the explaining variables. With the growth of emotional intelligence score by one standard deviation, there grows intensity of a more positive attitude to psychological tests by 0,11 of standard deviation. Whereas, growth of perseverance and resilience by one standard deviation is accompanied with directly proportional change in attitudes toward tests by 0,366 and 0,222 of standard deviation.

Table 1. Personal determinants of attitudes toward psychological tests

Statistics of change							
Model	***R***	***R-Square***	***Adjusted R-Square***	***F***	***df1***	***df2***	***Sig.***
1	,370[a]	,137	,058	1,734	1	109	,082

a. Predictors: (Constant), trait anxiety, state anxiety, locus of control, sensory sensitivity, activity, resilience, perseverance, reactivity, briskness, emotional intelligence

Table 2. Personal determinants of attitudes toward psychological tests – detailed analysis

Model		**Unstandardized coefficient**	**Standardized coefficient**			
		B	Std. Error	Beta	***t***	***Sig.***
1	(Constant)	16,393	7,733		2,120	,036

Model		Unstandardized coefficient	Standardized coefficient			
		B	Std. Error	Beta	*t*	*Sig.*
	Emotional Intelligence	,110	,051	,226	2,181	**,031**
	Locus of control	-,044	,183	-,022	-,239	,812
	Briskness	,108	,211	,061	,512	,610
	Persever-ance	,366	,166	,241	2,204	**,030**
	Sensory sensitivity	-,067	,161	-,043	-,413	,680
	Reactivity	,158	,154	,122	1,023	,308
	Resilience	,222	,126	,186	1,770	**,080**
	Activity	-,115	,142	-,084	-,808	,421
	State anxiety	,045	,051	,094	,883	,379
	Trait anxiety	-,037	,071	-,056	-,522	,603

a. Dependent variable: attitudes toward psychological tests

Personal determinants of attitudes toward psychological tests among psychology and management students

The next stage of data analysis consisted in building and verifying the model which could allow for predicting attitudes toward tests with consideration given to the differentiating variable – a faculty. Although psychology students (M = 38,68) and management students (M = 38,88) do not differ significantly in the intensity

of their attitude to the examination (t(118) = -0,21; p = 0,84), yet making separate analyses for the two faculty groups will be a valuable complement to the analysis of attitude determinants.

Below, in tables 3 and 4, there are regression models for psychology students and for management students. According to the data contained in table 3, it may be stated that personality determinants explain 24% of variety of attitudes toward tests among psychology students and this model is relatively well fitted to the data (a statistically significant tendency, F(1,49) = 1,529; p = 0,1).

Table 3. Personal determinants of attitudes toward psychological tests of psychology students

Statistics of change							
Model	***R***	***R-Square***	***Adjusted R-Square***	***F***	***df1***	***df2***	***Sig.***
1	,488[a]	,238	,082	1	49	1,529	0,1

a. Predictors: (Constant), trait anxiety, state anxiety, locus of control, sensory sensitivity, activity, resilience, perseverance, reactivity, briskness, emotional intelligence

The model of linear regression for management students explains 29% of variance of the dependant variable and it may be referred to as a statistically significant and well fitted model (F(1,49) = 1,994; p = 0,05).

Table 4. Personal determinants of attitudes toward psychological tests of management students

Statistics of change							
Model	***R***	***R-Square***	***Adjusted R-Square***	***F***	***df1***	***df2***	***Sig.***
1	,538[a]	,289	,144	1	49	1,994	,05

Predictors: (Constant), trait anxiety, state anxiety, locus of control, sensory sensitivity, activity, resilience, perseverance, reactivity, briskness, emotional intelligence

Tables 5 and 6 point to the personal variables which determine attitudes toward tests in the two groups of students. On the basis of the data contained in table 5, it is claimed that for psychology students perseverance (*Beta* = 0,376) and emotional

intelligence (*Beta* = 0,274) constitute the significant variables that explain the attitudes. With the growth of perseverance by one standard deviation, there grows the intensity of positive attitude to psychological tests by 0,532 of standard deviation. In case of emotional intelligence, a tendency is observed. With the growth of emotional intelligence by one standard deviation, there appears a positive change in attitude to psychological tests by 0,161 of standard deviation.

Table 5. Personal determinants of attitudes toward psychological tests of psychology students – detailed analysis

Model		**Unstandardized coefficient**	**Standardized Coefficient**			
		B	***Std. Error***	Beta	***t***	***Sig.***
1	(Constant)	12,200	12,866		,948	,348
	Emotional Intelligence	,161	,084	,274	1,914	**,061**
	Locus of control	,382	,267	,198	1,430	,159
	Briskness	,012	,342	,006	,036	,971
	Perseverance	,532	,225	,376	2,368	**,022**
	Sensory sensitivity	-,202	,274	-,112	-,736	,465
	Reactivity	,121	,215	,095	,560	,578
	Resilience	,107	,178	,090	,602	,550
	Activity	-,343	,205	-,249	-1,671	,101
	State anxiety	,065	,072	,141	,906	,369
	Trait anxiety	-,039	,093	-,062	-,415	,680

a. Dependent variable: attitudes toward psychological tests

For the group of management students, the personal determinants include locus of control (*Beta* = -0,250) and resilience (*Beta* = 0,307). The growth of resilience by one standard deviation results in the growth of intensity of positive attitude to psychological tests by 0,368 of standard deviation. Whereas the growth of external locus of control is accompanied with decrease in intensity of positive attitude toward tests by 0,504 of standard deviation.

Table 6. Personal determinants of attitudes toward psychological tests of management students – detailed analysis

Model		**Unstandardized coefficient**	**Standardized coefficient**			
		B	***Std. Error***	Beta	***t***	***Sig.***
1	(Constant)	18,647	10,371		1,798	,078
	Emotional Intelligence	,096	,068	,224	1,409	,165
	Locus of control	-,504	,261	-,250	-1,934	**,050**
	Briskness	,176	,279	,105	,629	,532
	Persever-ance	-,067	,258	-,040	-,258	,798
	Sensory sensitivity	-,027	,197	-,019	-,138	,891
	Reactivity	,378	,231	,283	1,638	,108
	Resilience	,368	,184	,307	2,002	**,050**
	Activity	,116	,204	,086	,570	,571

Model		Unstandardized coefficient	Standardized coefficient			
		B	***Std. Error***	Beta	***t***	***Sig.***
	State anxiety	,071	,077	,145	,928	,358
	Trait anxiety	-,068	,106	-,098	-,647	,520

a. Dependent variable: attitudes toward psychological tests

Personal determinants of attitudes toward psychological tests among women and men

The last stage of the conducted analyses lied in verification of the model of personal determinants of attitudes toward psychological tests among women and men. They also do not differ in intensity of the attitudes (t(118) = 0,95; p = 0,34, M for women = 39,22, M for men = 38,29). As seen in table 7, the above model of regression explains 26% of variance of attitude to tests presented by women (F(1,52) = 1,774; p = 0,08). On the basis of the data contained in table 8, it is stated that the significant variables are: activity (*Beta* = -0,333) and emotional intelligence (*Beta* = 0,342). The growth of activity by one standard deviation is accompanied with lowering of positive attitude toward psychological tests by 0,426 of standard deviation. While the growth of emotional intelligence by one standard deviation results in a positive change in attitude by 0,159 of standard deviation.

Table 7. Personal determinants of attitudes toward psychological tests of women

Statistics of change							
Model	***R***	***R-Square***	Adjusted R-Square	F	df1	df2	Sig.
1	,504[a]	,254	,111	1	52	1,774	,08

a. Predictors: (Constant), trait anxiety, state anxiety, locus of control, sensory sensitivity, activity, resilience, perseverance, reactivity, briskness, emotional intelligence

Table 8. Personal determinants of attitudes toward psychological tests of women – detailed analysis

Model		Unstandardized coefficient		Standardized coefficient		
		B	***Std. Error***	Beta	***t***	***Sig.***
1	(Constant)	15,344	9,397		1,633	,109
	Emotional Intelligence	,159	,064	,342	2,463	**,017**
	Locus of control	,099	,249	,052	,398	,692
	Briskness	-,029	,274	-,018	-,108	,915
	Persever-ance	,225	,249	,149	,902	,371
	Sensory sensitivity	,331	,223	,206	1,483	,144
	Reactivity	-,116	,223	-,087	-,520	,605
	Resilience	,168	,170	,154	,990	,327
	Activity	-,426	,185	-,333	-2,308	**,025**
	State anxiety	-,054	,068	-,112	-,792	,432
	Trait anxiety	,050	,084	,084	,597	,553

a. Dependent variable: attitudes toward psychological tests

In tables 9 and 10, there are presented personal determinants of attitudes toward test examination among men. The suggested model of prediction turned out to be statistically significant (F(1,46) = 2,561; p = 0,015). The variables of briskness (*Beta* = 0,359), reactivity (*Beta* = -0,322), anxiety state (*Beta* = 0,301), and perseverance (*Beta* = 0,299) explain 36% of variance of attitude toward psychological tests.

Table 9. Personal determinants of attitudes toward psychological tests of men

Statistics of change							
Model	***R***	***R-Square***	***Adjusted R-Square***	***F***	***df1***	***df2***	***Sig.***
1	,598[a]	,358	,218	1	46	2,561	**,015**

a. Predictors: (Constant), trait anxiety, state anxiety, locus of control, sensory sensitivity, activity, resilience, perseverance, reactivity, briskness, emotional intelligence

Table 10. Personal determinants of attitudes toward psychological tests of men – detailed analysis

Model		**Unstandardized coefficient**	**Standardized coefficient**			
		B	***Std. Error***	Beta	***t***	***Sig.***
1	(Constant)	17,505	11,828		1,480	,146
	Emotional Intelligence	,038	,076	,074	,498	,621
	Locus of control	,007	,258	,003	,026	,979
	Briskness	,677	,307	,359	2,206	**,032**
	Persever-ance	,453	,224	,299	2,019	**,049**

Model		Unstandardized coefficient		Standardized coefficient		
		B	***Std. Error***	Beta	***t***	***Sig.***
	Sensory sensitivity	-,285	,222	-,185	-1,287	,205
	Reactivity	-,401	,203	-,322	-1,977	**,050**
	Resilience	,084	,185	,064	,454	,652
	Activity	,194	,208	,134	,930	,357
	State anxiety	,143	,072	,301	1,969	**,050**
	Trait anxiety	-,219	,119	-,298	-1,835	,730

a. Dependent variable: attitudes toward psychological tests

The dependence between the predictors and the dependant variable is moderate and positive in three cases and negative in one case. The higher the level of briskness, anxiety state and perseverance, and the lower the level of reactivity, the more positive attitude toward tests among the examined men. With the growth of briskness by one standard deviation, there changes the attitude to psychological tests by 0,677 of standard deviation. The growth of perseverance by one standard deviation is accompanied with change in attitude to psychological tests by 0,453 of standard deviation. While decrease in reactivity and increase in anxiety state contribute to the directly proportional growth of attitude to tests by 0,401 and 0,143 of standard deviation, respectively.

Discussion

It is shown in reports made by varied authors (Barrick & Mount, 1993; Barrick, Mount, & Strauss, 1993; Hunter & Schmidt, 1990; Jamka, 2001; Salgado, 1997; D.P. Schultz & S.E. Schultz, 2002) that tests are good predictors of task completion and assessment of training effects. For instance, intelligence tests are strongly related to assessment made by a supervisor, quantity and quality of production, work

samples, or job mobility of an employee. The discussed examination tools appear useful in searching candidates for posts of a seller, a clerk, a manager, a gastronomy worker, a designer, a policeman, and to less extent unqualified workers and bus or truck drivers.

The studies presented in the current article were aimed at analysing personal determinants of attitudes toward tests with consideration given also to gender and a selected faculty. According to R. D. Arvey, W. Strickland, G. Drauden, and C. Martin (1990), the attitude toward tests exerts a greater influence upon the level of test completion than physical or cognitive capabilities of an examinee do. Thus, what attitudes toward tests were displayed by the participants of the study and what influenced their attitudes?

Although women and management students had more positive attitudes toward tests than men or psychology students had, yet there were not found any statistically significant differences in the attitude intensity among them. In the whole examined group, the most positive attitude to tests was displayed by women (above the general mean value, which equalled M = 38,78), and the least positive attitude was that possessed by men (below the general mean value). Lack of statistically significant results may be explained by the growing popularity of psychological tests, which are familiar to students, and thus to future job candidates, and completed by them in recruitment procedures. Nevertheless, it also suggests a necessity of further analyses in a larger and more diversified sample.

The next stage of the data verification consisted in searching variables that could allow for predicting attitudes toward psychological tests. The highest model of attitudes prediction was observed in the group of men (36% of variance of attitudes toward tests), the lowest one – in the whole examined group of 120 persons (only 14% of variance of the variable). The most frequent determinants of attitudes toward tests included perseverance (for the whole examined group, for psychology students, and for men) and emotional intelligence (for the whole examined group, for psychology students, and for women). Thus, the hypothesis H4 was confirmed, while the hypothesis H1e was rejected. The result for emotional intelligence may be justified using the very definition of this notion, which is described as a set of capabilities that determines use of emotions while solving problems in varied social situations, and also as use of emotions in order to improve focusing attention and logical thinking (Jaworowska & Matczak, 2001). Whereas the result related to perseverance is quite astonishing, especially that persons characterised with this trait display a tendency to long-lasting experiencing of emotions and excessive focusing upon the past (Zawadzki & Strelau, 1997). In this case, it should be assumed that what is important is stability of reaction, a marked feature of every attitude, and also profound and repeated analysis of a test situation, which may favour positive attitude to the test. Resilience turned out to be the second frequent predictor (for all the study participants and for management students), which confirmed the hypothesis H1d. The examinees who are able to cope in unfavourable conditions, to work for a long time

or with a particular intensity, will have a positive attitude to the necessity of making a test examination. The remaining personal determinants of attitudes toward tests included: locus of control (internal locus of control in management students determines their more positive attitude toward tests, confirmed hypothesis H2), activity (the lower level of activity in women, the more positive attitude to tests, rejected hypothesis H1b), briskness and low reactivity (high flexibility of behaviour and emotional immunity strengthens a more positive attitude to tests in men, confirmed hypotheses H1a and H1e), and anxiety state (the higher level of anxiety state leads to a more positive attitude to tests in men, rejected hypothesis H3). Thus, the higher level of emotional intelligence, perseverance, and resilience, the more positive attitude toward tests among all the study participants and among psychology students. High resilience and internal locus of control are the personal determinants of attitudes toward tests among management students. Higher level of emotional intelligence and lower activity, *i.e*. lower tendency to take risk and to engage in impulsive behaviours, present predictors of attitudes displayed by women. While high flexibility of behaviour, perseverance, low reactivity, and higher anxiety state determine a more positive attitude toward tests displayed by men.

The obtained results are interesting as they submit to evaluation the selected personal traits that may determine attitudes toward a test examination. They certainly present a basis for further verification of hypotheses in other groups of examinees. It may be assumed that analyses conducted in this direction may contribute to modify examination procedures. It appears that inducing anxiety by a test does not necessarily influence the obtained results in a negative way, as in case of men this s ituation determines their more positive attitude to tests. Whereas some purposeful modifications in examination procedures, including for example changes in instructions and ways of building a relationship between an examinee and an experimenter, may lower negative emotions that are related to both selection tests and the very organisation which orders their administration.

References

Aronson, E., Wilson, T.D., Akert, R.M. (2006). *Psychologia społeczna. [Social psychology]* Poznań: Wydawnictwo Zysk i S-ka.

Arvey, R.D., Strickland, W., Drauden, G., Martin, C. (1990). Motivational components of test taking. *Personnel Psychology,* 43, 695-716.

Barrick, M.R., Mount, M.K. (1993). Autonomy as a moderator of the relationship between the Big Five personality dimensions and job performance. *Journal of Applied Psychology,* 78, 111-118.

Barrick, M.R., Mount, M.K., Strauss, J.P. (1993). Conscientiousness and performance of sales representatives: test of the mediating effects of goal setting. *Journal of Applied Psychology,* 78, 715-722.

Brzeziński, J. (1996). *Metodologia badań psychologicznych. [Methodology of psychological research].* Warszawa: PWN.

Brzeziński, J., Hornowska, E. (2000). Podstawowe metody badawcze – teoria i praktyka testowania. [Elementary research methods – theory and practice] (w:) J. Strelau (red.). *Psychologia. Podręcznik akademicki, [Psychology. Academic book]* tom I (s. 389-435). Gdańsk: GWP.

Domachowski, W., Kowalik, S., Miluska, J. (1984). *Z zagadnień psychologii społecznej. [Problems of social psychology].* Warszawa: PWN.

Drwal, R.Ł. (1995). *Adaptacja kwestionariuszy osobowości.* [*Adaptation of personality questionnaires].* Warszawa: PWN.

Guilford, J.P. (1988). Teoria testów psychologicznych. [*Theory of psychological tests*] (w:) J. Brzeziński (red.). *Problemy teorii, rzetelności, konstrukcji i analizy wyników testów psychologicznych*. *[Problems of theory, reliability, construction and analyses of results of psychological tests*] (s. 9-50).Warszawa: PTP.

Hunter, J.E., Schmidt, F.L. (1990). *Methods of Meta-Analysis.* Newbury Park: Sage Publications.

Jamka, B. (2001). *Dobór zewnętrzny i wewnętrzny. Teoria i praktyka. [Internal and external recruitment. Theory and practice].* Warszawa: Difin.

Jaworowska, A., Matczak, A. (2001). *Kwestionariusz Inteligencji Emocjonalnej*. [*Emotional Intelligence Questionnaire*]. Warszawa: PTP.

Mądrzycki, T. (2002). *Osobowość jako system tworzący i realizujący plany*. [*Personality as a system of creating and realizing plans]*. Gdańsk: GWP.

Mika, S. (1982). *Psychologia społeczna.* [*Social psychology*]. Warszawa: PWN.

Salgado, J.F. (1997). The five factor model of personality and job performance in the European community. *Journal of Applied Psychology*, 82, 30-43.

Schultz, D.P., Schultz, S.E. (2002). *Psychologia a wyzwania dzisiejszej pracy. [Psychology and challenges of today work].* Warszawa: PWN.

Spielberger, C.D. (1966). *Anxiety and Behavior.* New York: Academic Press.

Strelau, J. (1985). *Temperament, osobowość, działanie. [Temperament, personality, action].* Warszawa: PWN.

Strelau, J. (2000). Temperament. [Temperament]. (w:) J. Strelau (red.). *Psychologia. Podręcznik akademicki, [Psychology. Academic book]* Tom II (s. 683-719). Gdańsk: GWP.

Wojciszke, B. (2001). *Psychologia postaw i ocen.* [*Psychology of attitude and opinions*]. Gdańsk: GWP.

Wrześniewski, K., Sosnowski, T. (1987). *Inwentarz Stanu i Cechy Lęku (ISCL). Polska adaptacja STAI. [Anxiety state and Anxiety trait (ISCL). Polish adaptation of STAI].* Warszawa: Polskie Towarzystwo Psychologiczne -Wydział Psychologii Uniwersytetu Warszawskiego - Laboratorium Technik Diagnostycznych im. Bohdana Zawadzkiego.

Zawadzki, B., Strelau, J. (1997). *Formalna charakterystyka zachowania – kwestionariusz temperamentu (FCZ-KT).* [*Formal Characteristics of Behaviour – Temperament Questionnaire].* Warszawa: PTP.