

# COMPARISON OF PERSONAL QUALITIES AND TEMPERAMENT CHARACTERISTICS BETWEEN MALE AND FEMALE STUDENTS FROM TRAINING GROUPS IN TABLE TENNIS AT THE UNIVERSITY OF NATIONAL AND WORLD ECONOMY

*Original scientific paper*

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## **Abstract**

*Among other things, a wide range of qualities appropriate to the personality with its specific individual temperament is necessary for successful professional fulfilment. Personal qualities are of high importance for economics profession. It is therefore important to research and if possible to influence on them by means of physical education and sport. We have investigated seven of such qualities and compared the results by male and female students, attending classes in table tennis at Sofia University of National and World Economy. The present research was conducted in the month of May 2012 in the Bonsist Sports Complex of the University of National and World Economy. The contingent of the research are 32 male students (average age of 19 years and 10 months) of the 1<sup>st</sup> course and 25 female students (average age of 20 years and 08 months) of the 1<sup>st</sup> and the 2<sup>nd</sup> course, attending classes in table tennis at the University of National and World Economy. With respect to variability of parameters the both groups are defined as relatively homogeneous, except for neuroticism, in which both groups are highly heterogeneous and unstable. When comparing the results of male and female students the differences in their personal anxiety and neuroticism were found, specifically the female students were more anxious and neurotic, which was also confirmed statistically by Student's t-test.*

**Keywords:** *male and female students of economics, moral and volitional qualities, communication and organizational skills, economics profession, physical education and sport, personal anxiety and neuroticism, extraversion-introversion, variance analysis, Student's t-test*

## **INTRODUCTION**

In terms of sports teaching profession, as practiced in the university of economics, it is essential for the specialists to know which contingent of students they work with and especially which abilities this contingent of students have and where they can be applied. Apart from sports teachers, the presence and intensity of different abilities are also attractive for the major part of employers when recruiting for companies, banks and other business units. Directly or through specialized companies, as already the case is in the world and in Bulgaria (Spasov (Спасов), 2004); Stavrev (Ставрев), 2011). The *variability of parameters* qualities required for certain professions are defined by making job profile diagrams for occupations that are important to know in details (Spasov (Спасов), 2004) considers that a number of professions require certain personal qualities, such as equability of mind, maturity, ability to cope with stress, perseverance, patience, tolerance, sense of humor and many more. The economist profession is not an exclusion. Thus, for example, after applying the content analysis of a job profile diagram (Information Folder I-041 (Информативна папка И-041), 2000), the important motor, mental (Stavrev & Tsvetkov (Ставрев & Цветков), 2011) and personal qualities (Stavrev (Ставрев), 2011) are defined. In the perception of (Stavrev (Ставрев), 2011) among the important personal qualities for the economist profession are ethics,

sociability, discipline and mental stability, which are within the groups of moral and volitional, communicative and emotional stability (Popov (Попов), 1999). Establishing the level of development of these qualities, introducing the students to the results and benefits of this type of research will help for a better career guidance and professional fulfillment after completion of the university studies.

In a number of researches to date the links between moral and volitional qualities and types of thinking (Stavrev & Tsvetkov (Ставрев & Цветков), 2012) have been examined, as well as the influence of the temperament over the quality of thinking (Tsvetkov & Stavrev (Цветков & Ставрев), 2012) for male and female students, attending basketball classes at the University of National and World Economy. Stavrev & Moneva (Ставрев & Монева), 2012), compare the moral and volitional qualities with the temperament characteristics of the female students, who played basketball and table tennis at the University of National and World Economy. Here the researchers found no statistically significant differences in parameters for moral and volitional qualities, as well as in parameters representative of the temperament of the female students playing basketball and table tennis. Iliev, Bozhkova & Obreshkov (2011), investigate the influence of sports activities in table tennis

and football during PE classes over the intellectual capacities of the students from the University of Ruse.

Bozhkova, Dyakova & Stavrev (2013), compare the concentration and attention span, along with operative thinking of students from Sofia University of National and World Economy and Varna University of Economics. They figured out that as for the concentration and attention span the students from Sofia University of National and World Economy predominate over their counterparts from Varna University of Economics in both parameters - concentration and attention span. As regard to operative thinking the students from Varna University of Economics prevail over their counterparts from Sofia University of National and World Economy in all three components - speed, accuracy and capacity.

In existing researches the comparison between moral, volitional, communication and organizational qualities has not been made, neither temperament characteristics of male and female students, attending classes in table tennis at the University of National and World Economy.

The goal of the research is to compare moral, volitional, communication and organizational qualities along with temperament characteristics (extraversion-introversion, neuroticism and personal anxiety) of male and female students, attending classes in table tennis at the University of National and World Economy.

#### Research objectives

- To determine the level of development of moral, volitional, communication and organizational qualities along with temperament characteristics (extraversion-introversion, neuroticism and personal anxiety) of male and female students, attending classes in table tennis.
- To determine the variability of parameters for moral, volitional, communication and organizational qualities along with temperament characteristics (extraversion-introversion, neuroticism and personal anxiety) of male and female students, attending classes in table tennis.
- To compare the parameters of the qualities under investigation between male and female students from groups in table tennis and to determine the statistical significance of differences.

#### METHODS

The present research was conducted in the month of May 2012 in the Bonsist Sports Complex of the University of National and World Economy. The contingent of the research are 32 male students (average age of 19 years and 10 months) of the 1<sup>st</sup> course and 25 female students (average age of 20 years and 08 months) of the 1<sup>st</sup> and the 2<sup>nd</sup> course, attending classes in table tennis at the University of

National and World Economy. The subject of the research is moral, volitional, communication and organizational qualities along with temperament characteristics of male and female students (extraversion-introversion, neuroticism and personal anxiety).

We made the assessment of the moral personal qualities by method of Melnikov & Yampolski (Мельников & Ямпольский) according to Fetiskin, Kozlov & Manuylov (Фетискин, Козлов & Мануйлов) (2009) and the will-power was investigated by the test method of Fetiskin et al., (Фетискин, et al.), (2009). The communication and organizational personal talents were assessed by KOS 2 test method of Fetiskin, Kozlov & Manuylov (Фетискин, Козлов & Мануйлов), (2009). The temperament was researched by test method of Spilberger, Yanev's modification for personal anxiety determination and by standard method of H. J. Eysenk's questionnaire – form A for determination of extraversion-introversion and neuroticism (Yanev (Янев) 1980).

We put the obtained research results to mathematical and statistical processing through variance analysis. The aim was to determine the average values and coefficient of variation for both groups of students surveyed – male and female. To determine the significance of differences between mean values of the tested totality at various parameters the Student's t-criterion was used for independent selections at the significance level of  $P(t) \geq 95\%$ .

#### RESULTS AND DISCUSSION

The average performance levels of the qualities under research are shown in table 1, as well as the coefficients of variation of the seven parameters for both groups - girls and boys. The coefficient of variation values (V%) show us that in terms of the moral qualities the female group of students is relatively homogeneous and the male group of students is heterogeneous, despite their close values for  $V\% = 29,2\%$  and  $32,2\%$ .

The values for volition, communication and organizational qualities, personal anxiety and extraversion-introversion (Tests № 1,2, 3, 4, 5 and 6) do not significantly differ and both groups are determined as relatively homogeneous (V% is in the range of 10÷30%). Only by neuroticism value (Test №7) the both groups are highly variative and unstable with extremely high values of V%, especially for the male students ( $V\%=62,10\%$ ).

These results are similar to the previous research of female students from groups in table tennis and basketball at the University of National and World Economy and the variability of their performance is identical (Stavrev & Moneva, 2012).

By comparison of the average values of parameters (table 2) for moral, volitional, communication and organizational qualities it can be seen that they are close and the differences d are within the range from -0,04 to 1,44.

Table 1. Average values and variability of parameters for personal qualities and temperament characteristics of male and female students from training groups in table tennis at the University of National and World Economy

Test	Parameters under research	X min		X max		R		Mean		S		V %	
		Girls	Boys										
1	Moral qualities	3	1	13	12	10	11	8,2	8,2	2,4	2,6	29,2	32,2
2	Volition	15	13	28	27	13	14	21,6	22,3	3,2	3,1	14,8	14,1
3	Communication skills	4	4	21	20	17	16	14,7	16,2	4,3	3,7	29,2	22,9
4	Organizational skills	4	10	20	19	16	9	14,1	15,1	3,1	2,7	21,7	17,6
5	Personal anxiety	28	25	67	49	39	24	41,3	35,7	8,8	6,4	21,4	17,9
6	Extraversion-introversion	8	10	21	22	13	12	14,0	15,2	3,0	2,6	21,3	17,2
7	Neuroticism	2	2	20	19	18	17	9,7	6,8	4,6	4,3	47,5	62,1

Table 2. Results of testing and significance of differences between personal qualities and temperament characteristics of male and female students from groups in table tennis at the University of National and World Economy

Test	Parameters under research	Female students		Male students		Growth		Statistical significance	
		Mean	S	Mean	S	d	d%	T	P(t)%
1	Moral qualities	8,20	2,4	8,16	2,6	-0,04	0,49	0,07	51,0
2	Volition	21,60	3,2	22,28	3,1	0,68	3,15	-0,81	57,8
3	Communication skills	14,72	4,3	16,16	3,7	1,44	9,78	-1,35	81,9
4	Organizational skills	14,12	3,1	15,06	2,7	0,94	6,66	-1,25	78,2
5	Personal anxiety	41,28	8,8	35,72	6,4	-5,56	13,47	2,76	99,2
6	Extraversion-introversion	14,00	3,0	15,22	2,6	1,22	8,71	-1,64	89,4
7	Neuroticism	9,72	4,6	6,84	4,3	-2,88	29,63	2,44	98,2

For moral qualities the difference is as little as -0,04 points. In practice it does not exist. For these four parameters statistically significant difference ( $P(t) \geq 95\%$ ) between the male and female students was not found.

Comparing the values for parameters, characterizing the properties of temperament –personal anxiety, extraversion-introversion and neuroticism of the male and female students discovered the following facts: in test №5 (Personal anxiety) the difference  $d = -5,56$  points. This difference is statistically significant with  $P(t)=99,2\%$  and is more valid for male students; in test №6 (Extraversion-introversion) the difference is  $d=1,22$  points, but it is insufficient to be considered significant ( $P(t)=89,4\%$ ); the last tested parameter is neuroticism (test №7). The difference in average values for male and female students is  $d = -2,88$ . This difference is statistically supported by  $P(t)=98,2\%$  and is significant. This result is to the advantage of male students.

## CONCLUSIONS

- With respect to variability of parameters the both groups under research are relatively homogeneous, except for parameter №7 (neuroticism), in which both groups are heterogeneous and have unstable values. With respect to moral qualities the group of female students is relatively homogeneous and that one of male students is dissimilar/ heterogeneous.
- There are no significant differences in parameters for moral, volitional, communication and organizational, as well as in the parameter for extraversion-introversion;
- Statistically significant differences were found between male and female students in personal anxiety and neuroticism so. The female students are more anxious and neurotic than the male students.

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