

COMPARISON OF CORRELATION MODELS OF PSYCHOPHYSICAL CHARACTERISTICS BETWEEN MALE AND FEMALE STUDENTS FROM GROUP TEACHING IN THE UNIVERSITY OF NATIONAL AND WORLD ECONOMY – SOFIA

(Research note)

Spas Stavrev

*University of National and World Economy Sofia, Bulgaria
Faculty of business, Department of Physical Education and Sports, Sofia, Bulgaria*

Abstract

Our investigation has set the aim to establish the similarities and differences in the correlation models of significant qualities with male and female students, future economists. Under investigation have been 70 male and 46 female students (1st and 2nd year) of basketball group teaching on “Physical education” subject – elective obligatory form of education in the University of National and World Economy (UNWE). Results from all tests carried out (21) have been subjected to correlation analysis-normal linear correlation of K. Pearson for metric and scale variables, measuring the level / extent of dependence. Our task has been to compare the correlation models for establishment of the number of links between the indices investigated, their strength and character. There are coincidences in the number of links, but not in the strength of correlations. Significant differences have been established in the character of links too. The quality “balance” (equilibrium), with the male students has outlined with the greatest number of links (4), and with the female students, the “temperament” index (extraversion / introversion) – with seven links.

Keywords: *psychophysical characteristics, correlation models, male & female students, extraversion, introversion*

INTRODUCTION

In the contemporary, developed and intensive way of life, there are some authors grouping persons and their professional activities, admitting that a certain type of professional activity is most suitable for a given person, and that persons in the different professions have different psychic characteristics (Ertelt & Schulz (Ертелт & Шулиц), 2002). Despite of the intellectual character of labor for most of the professions, the economic ones included, for the professional fulfillment of their obligations and successful activity, a number of physical and psychic qualities are also needed. It is already normal for companies to work in the direction of “team building”, in some periods of time, stimulating the personal virtues, by the help of various sports and sport games, tourism, and etc. Thereby namely, the physical culture and sport would find its present place in the sphere of the professional orientation. Spasov (Спасов), (2004) has indicated that the suitability of a certain person to a given profession has a very summarized content, manifested not only in knowledge and skills, but also in the availability of physical and nervous-psychic qualities, some features of the character, as well as that the system of psycho-physical qualities is formed up and developed

for a long time, almost throughout the whole life.

In a survey of correlation links between the qualities with students, Kachev & Zlatev (Къчев & Златев), (2004.) have found the link between the physical capability on one side, and psychomotorics on the other side. Zlatarova (Златарова), (2007) has investigated the interrelation between the anthropometric height (standing) index and the speed-strength qualities of female students. In a survey of the interrelation between the indices, characterizing the physical growth and specific work capacity of students from Tsenov Academy of Economics – Svishtov, a conclusion has been made that for better results in basketball technique, it is necessary to stress on the development of speed-strength capabilities of the educated ones (Nikolov & Tsanova (Николов & Цанова), 2004).

At working up of professionograms of different professions in Bulgaria, a due place is devoted to the economic profession too (Information folder I-041 (Информационна папка И-041) with its various specialties. Stavrev & Tsvetkov (Ставрев & Цветков), (2011) and Stavrev (Ставрев), (2011) have classified the significant psychophysical qualities of the economic profession, helping its practicing. Tsvetkov & Stavrev (2012.) have

also investigated the interrelation between the temperament and types of thinking at male and female students in the University of Economics in Sofia, establishing that the high extroversion and lower neurosis influence positively the quality of thinking with both gender students, as well as that with female students the temperament properties have slightly bigger influence on thinking than with the male students, practicing basketball. The same authors (Stavrev & Tsvetkov, 2012) have investigated and established a dependency between the moral virtues and logic thinking with both gender students. Full investigation of the interrelations between the significant qualities of the economic profession by a holistic approach and comparison of correlation models between the male and female students have not been made until now.

METHODS

The aim of our investigation is to establish the resemblances (similarities) and differences in the correlation models of the significant qualities with male and female students, the future economists. The following two tasks were determined:

- To establish the number and strength of interrelations between the various qualities in the correlation models with both genders,
- To compare the inter-group correlation links with male and the female students.

Investigation has been carried out in the educational year 2011. Object of the investigation are the psychophysical qualities, established in former surveys as significant for the profession "economist". Contingent are 70 male and 46 female students (1st and 2nd year) of basketball groups of "Physical education" subject – elective obligatory form of education in the University of National and World Economy. We have investigated 21 significant indices by the available tests. For establishment of the level of development of the conditional properties and coordination capabilities of students – the future economists, the method of testing, as well as the tests for assessment of psychical and personality qualities, have been applied. These tests have been divided into three big groups, as follows:

MOTIVE:

1. Physical endurance;
2. Finger strength;
3. Quickness;
4. Balance;

PSYCHICAL:

5. Finger skills;
6. Attention concentration;
7. Operative thinking-moves;
8. Operative thinking-time;
9. Operative thinking-coefficient;
10. Analytic thinking;
11. Logical thinking;
12. Text memory;
13. Visual memory;

PERSONALITY:

14. Moral virtues;
15. Will qualities;
16. Personal activity;
17. Communication capabilities;
18. Organizational skills;
19. Anxiety;
20. Extroversion-introversion;
21. Neurosis;

Results of all 21 tests have been subjected to correlation analysis – general linear correlation of K. Pearson for metric and scale variables, measuring the level / extent of dependency, the numerical expression of their border significance being $r \leq P(t) \geq 95\%$.

RESULTS AND DISCUSSION

Comparing the correlation models of male and female students (Figure 1.), we have established an equal number of significant correlation dependencies (17) for the both genders. A bigger part of correlations with males is of poor (insignificant) dependence (14) and only three – of moderate strength. With the female students, fifty of the dependencies are of moderate strength, and the remaining two – of poor correlation.

With the students of all seventeen correlations, ten links have been established between the indices of motive qualities with the other two groups. Nine of them are with the group of psychical characteristics and there is only one link of the motive ones (balance) with the personality characteristics (morality).

The balance is a quality with the biggest number of correlations (4) among the three groups of qualities with students. Remaining three links of balance are with the indices for finger skill, speed and quality of operative thinking (Test Nos. 5, 7 and 8). Other three motive qualities have two correlations each and they all are with the group of psychical qualities. There are low dependencies between the physical endurance indices (Test No.1) and accuracy and quality of operative thinking indices (Tests Nos.7 and 9). Finger strength (Test No.2) correlates with the speed and quality of operative thinking. With both motive qualities, we deem that these links are illogical and casual. We have established links between the quickness (Test No.3) with dexterity of fingers (Test No.5) and with concentration of the attention (Test No.6). The last link shows that the students with higher concentration of attention would manifest better results, connected with the alacrity.

Analyzing the correlations between the psychological characteristics and personality qualities with students, we have established seven links. Two of them are of moderate strength while the remaining five are poor. Moderate are the links between the analytic thinking (Test No.10) and moral qualities (Test No.14), but this dependency, according to us is illogical. The second link of moderate strength is between text memory index (Test No.12) and communication capabilities (Test No.17), hence we could conclude that the text memory will improve with the more communicative students.

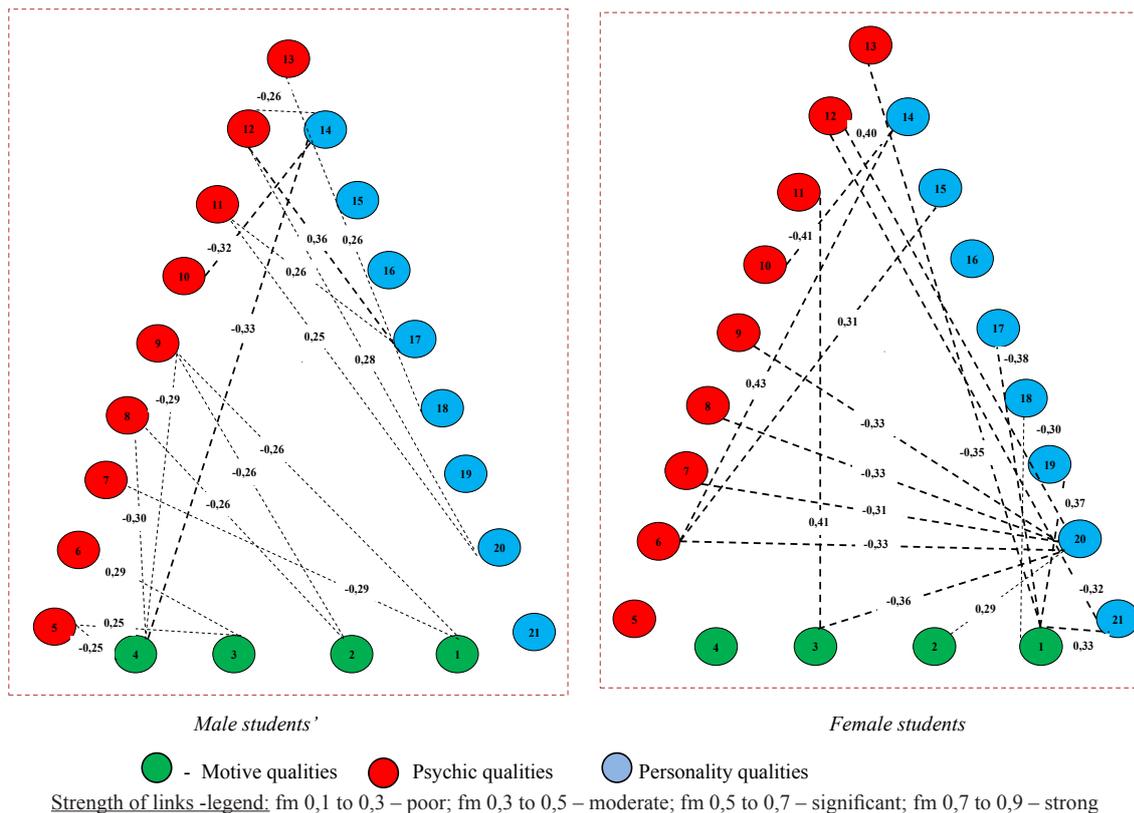


Fig. 1. Correlation-structural models of psycho-physical qualities necessary for the profession "economist"

Two of the five links of poor strength between the two groups of qualities are of the logic thinking indices (Test No.11) with the communication talents (Test No.17), which means that the better communication of students leads to better logic thinking and with index No.20 (extroversion-introversion), other two are between the text memory index (Test No.12) with the indices for moral qualities and extroversion-introversion (Test Nos.14 and 20). Thereof, we could conclude that students with manifested extroverted type character possess better values for text memory. The last link is between Test No.13 – visual memory and organizational talents (Test No.18). Hence, students of better organizational qualities possess better visual memory. Four qualities have differentiated as autonomic for the students. These are indices Nos.15, 16, 19, 21 – will qualities, personality activity, personality anxiety and neurosis that do not correlate with either of the indices.

Considering the inter-group links with female students, we can point out the big number of dependencies (7) of the extroversion-introversion index. What makes impression is the autonomy of indices No.4 (balance), No.5 (finger skill) and No.16 (personal activity). The last index is autonomic for the male students too. With female students, the great number of inter-dependencies of physical endurance index (5) is also outlined.

With female students, the total number of links of the motive qualities with the remaining two groups is eight, prevailing are the links with the group of personality (6), in contrast to the males, establishing with them

only one link with this group. Also, with the males, the balance index is with four links, and with the females correlations with this index are missing. With the biggest number (5) is the physical endurance index. Only one of them is with the group of psychical qualities – visual memory (Test No.13) and it is of moderate strength, and the remaining four correlations are with the group of personality qualities. At the link of physical endurance with organizational capabilities index (Test No.18) a poor correlation has been established, and with the communication capabilities (Test No.17) the link is of moderate strength ($r=-0,38$). Thereby we have established that the improvement of the physical endurance leads to improvement of communication capabilities too. The last two links of physical endurance index are with indices Nos.19 (personal anxiety) and 21 (neurosis). These links show that the more anxious and neurotic female students have lower physical endurance indices, which according to us should not be so and should be checked with other similar surveys.

With the female students, we have established nine links between the psychical and personality qualities too. All are of moderate strength. Concentration of attention index (Test No.6) correlates with indices Nos.14, 15 and 20 – moral qualities, potential of will and character features. We could conclude thereby that the female students of underlined extrovert character type concentrate better than the introvert ones.

The accuracy, speed and coefficient of operative thinking (Tests Nos.7, 8 and 9) have links with ex-

troversion-introversion index, confirming thereby that the character type influences the operative thinking in some way. Analytic thinking index (Test No.10) is dependent on the moral qualities (Test No.14). We deem this link illogical and casual. With the text memory (Test No.12) we have established a moderate dependence with the character type too (Test No.20). Text memory correlates with the moderate strength and with neurotic index (Test No.21). Basing this, we could state that the neurosis influences the memory of female students at some way. After establishing the big number of correlations of temperament index (extroversion-introversion) with most of the indices for intellectual qualities, we could conclude that important for the professional orientation of the future experts on economics is the establishment of the temperament type and the character.

CONCLUSIONS

Analyzing the obtained results, following conclusions could be noted:

- The number of links between the indices of the necessary psychophysical qualities for the profession “economist”, with the male and female students, is equal;

- The difference in the strength of dependency between the investigated psychophysical qualities with male and female students has been established – with the male students most of the links are poor, and with the female students prevailing are the moderate ones;

- Comparison of the correlation-structural models of male and female students shows that with the males the inter-group links predominantly are between *the motive qualities and psychical characteristics* and between *the psychic characteristics and personality qualities*. With the female students, the inter-group links predominantly are between *the motive qualities and personality qualities* and between *the psychical and personality qualities*;

- With the biggest number of links (4) with the male students the quality *balance* has outlined, followed by the *operative thinking coefficient and morality* (3 links each), and with the female students the *temperament index (extroversion - introversion)* with seven links, followed by the *physical endurance index* (5) and *concentration of attention* – three;

- Four qualities – *the will, personal activity, personal anxiety and neurosis* have been established as autonomic for the male students. Three qualities – *the balance, finger skill and personal activity* have established as autonomic with the female students.

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Correspondance:

Spas Stavrev

University of National and World Economy

Department "Physical culture and sport"

Studentski grad, 1700 "Hr. Botev", Sofia, Bulgaria

E-mail: stavrevspas@hotmail.com