

GENDER-BASED SPECIFICS OF INTELLECTUAL CHARACTERISTICS OF TOP MANAGERS*

Tokareva Yulia¹, Kovalenko Taisia², Tokarev Alexandr³

¹Professor of the Chair of Management of Human Resources and Psychology, Ural Federal University named after the first Russian President Boris Yeltsin, RUSSIA, ulia.tokareva@yandex.ru

²Associate Professor of Chair of Personnel management and Psychology, Ural Federal University named after the first Russian President Boris Yeltsin, RUSSIA, tais03_56@mail.ru

³Master student, Ural Federal University named after the first Russian President Boris Yeltsin, RUSSIA, tochkae@yandex.ru

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Abstract

Human resources practices give scientific credence for differentiation of management approaches, styles and behavioral patterns of male and female managers. It is proved that there are differences in social, psychological, and economic aspects of the management process for male and female managers. Although some gender studies are available, the question of comparison of intellectual characteristics of top managers still remains open. Such authors as T.I. Zaslavskaya, E.S. Balabanova, T.M. Dadaeva, I.A. Kovaleva and others insisted on mandatory consideration of management capabilities and skills of men and women. The objective of our research was to identify gender-based specifics of intellectual characteristics of top managers, to determine intellectual resources of male and female managers. The study included methods traditionally used for intelligence diagnostics, and proved significant differences between general mental capacities, intellectual and mnemonic manifestations of male and female managers that eventually affected their management strategy and dynamics. Both men and women over 50 years old were marked with the passivity of thinking and poor attention switch capability. Such persons hardly adapt to any changes of their working practice, are not prone to change the stream of their thought, or switch from one type of activity to another. Their intellectual processes are sluggish, and the pace of work is slowed.

The emotional components of thinking and distractibility are mostly indicative to women at the age of 45 to 50 years old, which means poor commitment to the task.

Perception speed and accuracy, attention distribution and concentration are indicative to male managers at the age of 40 to 45 years old which lets us make a suggestion about having an ability to work with various materials under pressure of time, to highlight the main contents, to compare symbols, numeric characters, etc.

Knowing about gender-based specifics of the intelligence will ensure a psychological aspect of personnel management and promotion.

Keywords: management behavior, gender-specific factors of management, intellectual characteristics of a manager, intellectual abilities, mental flexibility.

1 INTRODUCTION

Gender-based specifics of intellectual characteristics of male and female managers constitute a relevant issue not only in science but also in HR management practice. Intellectual characteristics of managers of various levels are studied using different criteria, each one of which represents a separate relevant issue for researchers and staff development specialists. As an example of specific criteria, we can cite the following characteristics: sex, education, work experience, age, etc. Comparative studies of intellectual capabilities based on these criteria have always delivered ambiguous results and left a lot of questions unanswered.

The issue of gender differences is addressed by such scientists as D.V.Vorontsov, L.V.Shtyleva, N.P.Rebrova, E.V.Ioffe, U.E.Guseva, T.A.Shvedchikova, N.B.Gafizova, I.S.Kletsyna and others. The scientists define the concept of "gender role" which is translated from English as behavior normally expected of male and female individuals; in other words, it is a behavior viewed as appropriate for men and women (Kovalyova I.A., Ozhigova L.N.)

The issue of intellectual characteristics of personality was addressed by Eysenck. He identifies three concepts based on which we can assess biological and psychometric intellect.

R. Sternberg interviewed experts and analyzed the obtained results using the method of factor analysis. Three forms of intellectual behavior were identified: verbal intelligence, capability to solve problems, practical intelligence (Zaslavskaya T.I.).

M.A.Kholodnaya marked out eight main approaches each one of which is characterized by a particular conceptual framework used for interpretation of the nature of intelligence (M.A.Kholodnaya)

A. Fedorova identified that the combination of willpower and intelligence are core features of manager's personality. According to the results of her study, this combination might be variable: "dim intelligence – weak will", "high intelligence – lack of will and confidence", "strong will – dim intelligence" (the most common type in Russia). However, given study does not take into account the influence of gender aspects of these characterological features of leaders on their managerial performance (Fedorova, A.).

The approach of L.Thurstone based on multiplicity of intellectual capabilities was further elaborated in the works of an American psychologist J.Guilford who suggested a pattern for description of various types of intellectual capabilities Kletsyna I., Tidor S.N).

Within the structural-genetic approach of Piaget, the intelligence is viewed as the supreme way to balance an individual and the environment characterized by its versatility. Within the cognitivist approach the intelligence is regarded as a set of cognitive operations. The factor analytical approach involves detection of stable elements based on a variety of test data (Ch.Spearman, H.Eysenck, S.Bart, L.Thurstone, D.Wechsler, F.Vernon).

2 MATERIALS AND METHODS

Presently, it is commonly assumed that a general intelligence exists which is essentially a universal psychological capability based on a genetically determined ability of the nervous system to process information with a certain speed and accuracy.

30 top managers, 15 male and 15 female, aged from 42 to 56 took part in the study. Management expertise ranged from 5 to 9 years.

Research methods: Brief Selection Test method by V.N.Buzin. Aim: determination of intelligence level.

Culture Fair Intelligence Test. It was put forward by R. Cattell and intended for assessment of intellectual development regardless of environmental variables (culture, education, etc.).

Amthauer Intelligence Structure Test. The test was developed for diagnostics of general aptitude level within the frame of professional psychodiagnostics.

3 RESULTS

Following application of the brief selection test method, we obtained the following results. 40% of male managers have an above-average level of general intelligence, as opposed to female managers among which only 13.3% showed an above-average level of general intelligence. 60% of male and 86.7% of female managers showed an average level of general intelligence.

Consequently, male managers have a higher level of general intelligence than female managers do. The established level represents a multivariable score of a general aptitude.

Men have a higher ability to generalize and analyze material than women.

Female managers have a much higher level of thinking flexibility than male managers since the associations suggested by men were chaotic in nature in most cases.

Sluggishness of thought process and poorly developed shiftability, i.e. learning ability, are detected among both male and female managers. Such individuals have difficulty in changing their line of thinking and shifting from one type of activity to another. Their intellectual processes are sluggish and the work pace is slowed.

Emotional components in thinking and distractibility are more characteristic of women, which is indicative of a poor task-orientation capacity.

Speed and accuracy of perception, attention distribution and focusing is more attributable to male managers which implies capability to work under pressure of time with a variety of materials, identify essentials in a content, compare numbers, signs, etc.

Orientation is also more characteristic of male managers who handle all the issues that arise, in contrast to female managers, who handle only the issues which are easy for them and may be solved quickly.

Spatial perception is more attributable to female-managers.

Following that, the Culture Fair Intelligence Test was conducted to diagnose intellectual development of male and female managers regardless of influence of environmental variables (culture, education, etc.). The average intellectual development score in men was 114.4, which corresponds to a high development level. The average score of intellectual development level in female managers was 104.87, which corresponds to average development level.

Distribution of intellectual development scores in men and women is shown in figure 2.

Taking into account that the average IQ rate is within a range from 90 to 110 points, the higher scores may be indicative of giftedness of a test subject; thus, we can acknowledge giftedness of 60% of male and 33.3% of female managers. The rest of the subjects showed the IQ scores corresponding to the average rate. Only 6.7% of female managers were revealed to have the intellectual development level below average.

Intellectual aptitude of men and women was assessed using the H.Eysenck method.

A high level of general intelligence was detected in the male group: the average score was 111.6. The average score in the female group was 109.1.

According to the obtained results, a conclusion can be made that 66.7% of men and 53.3% of women have a highly unconventional thinking and their intellectual abilities are well developed. The rest of subjects were characterized by an average level of development of intellectual abilities and unconventional thinking.

After that, the R. Amthauer method of verbal intelligence diagnostics was applied. Verbal abilities, mathematical abilities and constructive abilities of male and female managers, both theoretical and practical, were assessed.

Table 1 shows average score results of verbal intelligence testing in men and women.

Table 1 – Average scores of verbal intelligence in male and female managers.

	SC	WE	A	G
Men	13.67	13.4	15.93	19.87
Women	16.13	16.27	12.4	26.27

According to the table data, we can conclude that verbal intelligence is developed in women to a greater extent than in men. Female managers have higher scores in the following sub-tests: Sentence Completion, Word Elimination, and Generalization. This proves that women are characterized by: reasoning, common sense, sense of reality, established independency of thinking. They express verbal meaning better, they have a high responsiveness, and they are more capable of abstraction as opposed to men.

With regards to men, we can conclude that they are more capable of analogy which indicates ability to combine, flexible thinking, understanding of interrelationships and satisfaction with approximate solutions.

Thus, female managers are characterized with an advanced ability to operate with words as signals and symbols, predominance of verbal intelligence, a general commitment to social sciences and foreign languages. Practical thinking is well-developed.

Further, abilities in the field of math and programming were examined. The results are provided in Table 2.

Table 2 – Average scores of mathematical abilities in male and female managers.

	AP	NC
Men	11.20	12.47
Women	11.00	11.40

According to the obtained data, the average level of mathematical abilities in men and women may be determined.

According to the arithmetical test data, the average level of ability for mathematical analysis and synthesis, logical deduction and mathematical generalization in men and women may be determined.

Based on the number completion test data, the average level of predominantly analytic-synthetic mathematical abilities both in male and in female managers may be determined. This value is slightly higher in men. In this way, we can see that both men and women have poorly developed abilities in the field of practical mathematics and programming.

After that, constructive (spatial) abilities of a theoretical and practical nature were studied in male and female managers.

Table 3 shows average scores of spatial abilities in male and female managers.

Table 3 – Average scores of spatial abilities in male and female managers.

	SP	SG
Men	17.8	17.27
Women	15.27	14.87

As we can see from the table, male managers have more advanced spatial abilities.

Based on the spatial perception score we can conclude that men are characterized with a well-developed strict solution logic and extensive deduction system. Apart from analytic-synthetic abilities, performance of this task involves an advanced ability to perceive shape and size of plane figures among male managers. Handling of images includes their conscious retention in the memory, their planning based on the oncoming activities, forecasting of their results and their figurative summary. Women showed a much lower score of spatial perception, which indicates poor development analytic-synthetic abilities of women.

As to the spatial generalization scores, the male group also revealed a high level of abilities, as opposed to women. Consequently, we can make a conclusion that men have a highly developed ability to handle concepts, which is indicative of the ability of men to work with three-dimensional objects in practical space. Men have a well-developed visual active thinking.

Following that, we examined mnemonic abilities of men and women. The average score of mnemonic abilities equaled to 12.13 points in the male group, and 15.4 points in the female group.

Based on the obtained data it is possible to acknowledge a high level of verbal short-term memory in women in comparison to men.

Comparative study of the intellectual profile data of men and women shows predominance of intellectual abilities in men with the exception of verbal intelligence and mnemonic abilities.

In order to determine statistical difference in the intelligence scores of the two sample groups we have applied the Wilcoxon t-test (Table 4).

Table 4 – Statistical difference in the intelligence scores of men and women.

Item #	Characteristics	Wilcoxon t-test	Significance value (p)
1	General intelligence (intelligence level)	-1.37	0.17
2	Level of intellectual development	-1.96*	0.05
3	Intellectual abilities	-0.37	0.71
4	Sentence completion	-2.74*	0.006
5	Word Elimination	-2.42*	0.02
6	Analogies	-3.07*	0.002
7	Generalization	-3.3*	0.001
8	Arithmetical problems	-0.32	0.75
9	Number completion	-1.48	0.14
10	Spatial perception	-2.78*	0.005
11	Spatial generalization	-3.04*	0.002
12	Memory, mnemonic abilities	-3.08*	0.002

As reflected in Table 4, significant differences were revealed between the scores of the level of intellectual development of male and female managers (-1.96), between the verbal intelligence values, specifically, sentence completion (-2.74), word elimination (-2.42), analogies (-3.07), generalization (-3.3), as well as, differences in spatial abilities between men and women, specifically, spatial perception (-2.78) and spatial generalization (-3.04), as well as differences in mnemonic abilities between men and women (-3.08) with $p \leq 0.05$ and $p \leq 0.001$

4 ARTWORK

Conclusions:

Gender-based specifics of intellectual characteristics of male and female managers are the following:

- Both men and women have an average intelligence level (60% of men and 86.7% of women), whereas ability to generalize and analyze material, speed and accuracy of perception, distribution and concentration of attention are developed better in male than in female managers. Women are more characterized by flexible thinking, emotional components of thinking and distractibility. Sluggishness of thought process and ability to shift from one task to another are poorly developed in both male and female managers.
- The level of intellectual development, regardless of environmental variables, is high in men and average in women.
- In the group of male managers a high level of general intelligence has been revealed; the average score equaled to 111.6 points. In the group of female managers the average score equaled to 109.1 points, which is indicative of unconventional thinking ability; their intellectual abilities are well developed.
- Verbal intelligence is developed to a greater extent in female managers as opposed to the male ones. Women are characterized by: reasoning, common sense, sense of reality, established independency of

thinking. Men are characterized by a well-marked capacity for analogy, which attests their ability to combine, quick thinking, understanding of relationships and satisfaction with approximate solutions.

5. Both male and female managers have an average level of capacity for mathematical analysis and synthesis, logical deduction, mathematical generalization and application of analytical and synthetic mathematical skills.

6. Male managers have spatial abilities more developed, which is manifested in building of solution logic and an extensive system of deductions, capacity for an accurate perception of shape and size of plane figures. Men have a well-developed visual active thinking. Women are characterized by poor development of analytic-synthetic abilities.

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