# *College Students' Fitness Test Satisfaction--Based on SPSS Analysis*

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***Abstract:*** As the health problems of college students are getting more and more attention, a questionnaire survey is issued to college students, mainly to investigate the satisfaction of college students on physical fitness tests. For the collected questionnaires, some invalid questionnaires were deleted after preliminary processing. The project analysis of the remaining 36 valid questionnaires deleted some unreasonable questions, and the reliability and validity tests, factor analysis and tandem analysis were performed on the remaining reasonable questions. It was found that the college students surveyed still attached great importance to the physical health test, but they were not very satisfied with the physical health tests arranged by the school.

## 1. Introduction

A variety of materials show that college students are not optimistic about their physical health. A large and three boys from Nanjing University stunned and died in the cellar. A 2014 student from Jiangxi Normal University suddenly fell to the ground during the 1000-meter physical test. Such incidents are not uncommon. It is obvious that the physical fitness of college students needs to be improved. Undoubtedly, on the one hand, college students' physical condition needs to be improved, on the other hand, it also reflects that college students are not satisfied with physical fitness tests, and they are not serious enough to participate in physical fitness training. In order to study the satisfaction of college students on physical fitness tests, information was collected and analyzed by questionnaires.

## 2. Data

For the 50 questionnaires collected, 35 valid questionnaires were finalized by checking whether the

answers of homogenous or mutually exclusive questions were coordinated, the repetition rate, the missing values of the questions, and the consistency. The effective rate was 70%.

## 3. Project Analysis

Table 1: Independent sample test.

| | | F | sig | t | df | sig(two-tailed) |
|---|---|---|---|---|---|---|
| Q1 | Assumed equal variance | 24.882 | 0.000 | 4.593 | 20.000 | 0.000 |
| | Do not | | | 4.245 | 10.483 | 0.002 |
| Q2 | Assumed equal variance | 0.028 | 0.870 | 0.796 | 20.000 | 0.435 |
| | Do not | | | 0.801 | 19.678 | 0.433 |
| Q3 | Assumed equal variance | 0.209 | 0.652 | 6.239 | 20.000 | 0.000 |
| | Do not | | | 6.482 | 19.055 | 0.000 |
| Q4 | Assumed equal variance | 0.306 | 0.586 | 6.261 | 20.000 | 0.000 |
| | Do not | | | 6.337 | 19.914 | 0.000 |
| Q5 | Assumed equal variance | 0.018 | 0.895 | 2.161 | 20.000 | 0.043 |
| | Do not | | | 2.147 | 18.710 | 0.045 |
| Q6 | Assumed equal variance | 0.454 | 0.508 | 1.169 | 20.000 | 0.256 |
| | Do not | | | 1.140 | 16.703 | 0.270 |
| Q7 | Assumed equal variance | 0.768 | 0.391 | 2.416 | 20.000 | 0.025 |
| | Do not | | | 2.376 | 17.660 | 0.029 |
| Q8 | Assumed equal variance | 3.668 | 0.070 | 3.061 | 20.000 | 0.006 |
| | Do not | | | 3.284 | 14.764 | 0.005 |
| Q9 | Assumed equal variance | 0.095 | 0.761 | 2.491 | 20.000 | 0.022 |
| | Do not | | | 2.500 | 19.533 | 0.021 |
| Q10 | Assumed equal variance | 3.709 | 0.068 | 2.896 | 20.000 | 0.009 |
| | Do not | | | 3.037 | 18.053 | 0.007 |
| Q11 | Assumed equal variance | 2.369 | 0.139 | 0.332 | 20.000 | 0.743 |
| | Do not | | | 0.323 | 16.380 | 0.751 |
| Q12 | Assumed equal variance | 0.010 | 0.920 | 2.479 | 20.000 | 0.022 |
| | Do not | | | 2.502 | 19.825 | 0.021 |
| Q13 | Assumed equal variance | 10.021 | 0.005 | 5.497 | 20.000 | 0.000 |
| | Do not | | | 5.172 | 12.316 | 0.000 |
| Q14 | Assumed equal variance | 0.016 | 0.902 | 1.636 | 20.000 | 0.118 |
| | Do not | | | 1.625 | 18.744 | 0.121 |
| Q15 | Assumed equal variance | 0.000 | 0.991 | 1.795 | 20.000 | 0.088 |
| | Do not | | | 1.799 | 19.476 | 0.087 |
| Q16 | Assumed equal variance | 0.003 | 0.957 | 1.956 | 20.000 | 0.065 |
| | Do not | | | 1.948 | 18.918 | 0.066 |
| Q17 | Assumed equal variance | 2.103 | 0.162 | 3.522 | 20.000 | 0.002 |
| | Do not | | | 3.411 | 15.780 | 0.004 |
| Q18 | Assumed equal variance | 0.166 | 0.688 | 6.056 | 20.000 | 0.000 |
| | Do not | | | 5.999 | 18.458 | 0.000 |

A total of 24 questions were set up in the questionnaire, of which gender accounted for 1 question, satisfaction survey accounted for 19 questions [1], and specific project understanding means that multiple choice questions accounted for 4 questions. Among them, the satisfaction set is repeated

and adjacent to the two questions, which is used to determine the validity of the questionnaire in the early stage, and the duplicated question is deleted in the following project analysis.

The project analysis of the 18 questions of the satisfaction survey, using "Q1" means "satisfying the school physical fitness test arrangement"; "Q2" means "whether or not to seriously participate in the physical fitness test"; "Q3" means "whether you understand the physical fitness test effect'';"Q4" means "Is not aware of the project's considerations"; "Q5" means "Is it considered difficult to complete the physique test project"; "Q6" means "Do you think that the physique test level and the learning level are related to each other"; "Q7" It means "I think the physical health test can enhance the social adaptability"; "Q8" means "the importance attached to the physical health test"; "Q9" means "Do you often exercise spontaneously"; "Q10" means "Is your health care?" "Q11" means "what is the satisfaction value of college students' sleep quality"; "Q12" means "how much insight into college students' regular physical exercise"; "Q13" means "how much do you know about your physical health"; Q14" means "how many people around the body are looking for physical fitness tests or fools"; "Q15" means "how sports performance"; "Q16" means "does that physical education is helpful for physical health"; "Q17" means "think Physique health test after going to college is helpful for your health"; "Q18" means "I think it is helpful to understand your health after physical examination." The independent sample test results are shown in Table 1. Only the sig (bilateral) values of Q1 and Q13 are less than or equal to 0.05, and the rest are greater than 0.05. The degree of polymerization of the title is not high. From the statistics of t, Q1, Q3, The corresponding t values of Q4, Q8, Q13, Q17, and Q18 are all greater than 3, indicating that these problems are better, and the remaining topics are considered for deletion.

## 4. Reliability and Validity Test

The cloned Bach's Alpha coefficient of this sample is 0.832 between the acceptable 0.8-0.9 reliability, indicating that there is no need to abandon the project in the revised scale. The KMO sample measure value is 0.824, which is between 0.8 (valuable) and 0.9 (excellent). The closer the value is to 1, the lower the partial correlation coefficient between the variables is, and the factor analysis is used to extract the common factors. The better the effect, the questionnaire designed in this paper is suitable for factor analysis. At the same time, Bartlett's approximate chi-square is 83.509, and when the degree of freedom is 21, it has reached a significant level. The Bartlett spherical test has a sig value of 0.000 and can reject the null hypothesis. From these two test statistics, it can be known that the item variables of the modified scale have a common factor, and the data file is suitable for factor analysis.

### 4.1. Factor Analysis

Table 2: Total variance interpretation.

| | initial eigenvalue | | | Extract the sum of squared loads | | |
|---|---|---|---|---|---|---|
| | total | variance percentage | cumulative% | total | variance percentage | cumulative% |
| ingredient 1 | 3.575 | 51.072 | 51.072 | 3.575 | 51.072 | 51.072 |
| ingredient 2 | 0.893 | 12.753 | 63.825 | | | |
| ingredient 3 | 0.796 | 11.376 | 75.201 | | | |
| ingredient 4 | 0.639 | 9.129 | 84.330 | | | |
| ingredient 5 | 0.551 | 7.873 | 92.203 | | | |

| | | | |
|---|---|---|---|
| ingredient 6 | 0.276 | 3.940 | 96.144 |
| ingredient 7 | 0.270 | 3.856 | 100.000 |

For the common factors extracted in the factor analysis [2], observe which variables are loaded on which variables, and explain the actual meaning of the common factors (the common factor nomenclature). However, after the initial common factor model is obtained, the factor load matrix tends to be more complicated, which is not conducive to factor interpretation. At this time, the factor rotation must be performed so that the values of the elements in the load matrix are differentiated to the extremes of 0 and 1, while maintaining the common factor variance of each element in the same row. In this way, by factor rotation, the load of each variable on the factor is more obvious, which is helpful to give a more clear and reasonable explanation for each common factor. In factor analysis, the ideal situation is that a principal factor has a strong load on only a few observed variables, while the load values on other observed variables are very low, so that you can directly use these observed variables. The main factor is described by comprehensive semantics. However, in some cases, the load of the principal factor on each observed variable is balanced, and it is difficult to extract the semantics of the principal factor directly from the observed variable. In this case, in order to make the observation of the principal factor more concentrated, the principal factor can be changed by the spatial transformation of the coordinate axes, so that each principal factor can correspond to a respective set of description variables, and this transformation makes The data points in the geometric space are closer to the new axis, so that the observed variables are distinguished by different principal factors. This is the concept of a rotation transformation. In this example, only one common factor is extracted, and the rotation cannot be performed, and the total variance interpretation is 5.072%. There is a total of 1 common factors, indicating that if 7 variables are not used, the use of the 1 common factor can only explain the original. 51.072% variation of 7 variables.

## 4.2. Tandem Analysis

Table 3: Gender and Q20 crosstab.

| | | Q20 | | | | | total |
|---|---|---|---|---|---|---|---|
| | | sprint | sit-ups | standing long jump | pull-ups | long-distance running | |
| male | counting | 4 | 1 | 6 | 4 | 4 | 13 |
| | percentage of sex | 30.80% | 7.70% | 46.20% | 30.80% | 30.80% | |
| | percentage of Q20 | 30.80% | 9.10% | 60.00% | 100.00% | 80.00% | |
| | percentage of total | 11.40% | 2.90% | 17.10% | 11.40% | 11.40% | 37.10% |
| female | counting | 9 | 10 | 4 | 0 | 1 | 22 |
| | percentage of sex | 40.90% | 45.50% | 18.20% | 0.00% | 4.50% | |
| | percentage of Q20 | 69.20% | 90.90% | 40.00% | 0.00% | 20.00% | |
| | percentage of total | 25.70% | 28.60% | 11.40% | 0.00% | 2.90% | 62.90% |
| total | counting | 13 | 11 | 10 | 4 | 5 | 35 |
| | percentage of total | 37.10% | 31.40% | 28.60% | 11.40% | 14.30% | 100.00% |

In the contingency analysis, “Q19” means “what is considered to be an objective result of the physical test project and needs to be changed”; “Q20” means “what is the best design of the physical test project”; “Q21” means “what kind of physical exercise is usually taken? "Q22" means "what measures are needed to make the body side more useful." Through the cross-tab, it is found that boys are mainly dissatisfied with pull-ups, sit-ups and long-distance running, while girls are not satisfied with any physical test items except for pull-ups (because girls do not need to measure the pull-ups); Through the cross-tabulation of gender and Q20, it is found that boys and girls prefer to sprint a little, which accounts for 37.10% of the total; it is also found that women do not participate in sports of large balls and equipment during their life, and the survey results show 0; In terms of what is needed to make the body side more useful, the bonus credits and the improved health report totaled 57.10% of the total.

## 5. Conclusion

The survey results and statistical results show that the students surveyed still attach great importance to the physical health test, but are not very satisfied with the physical health test arranged by the school. Boys are mainly dissatisfied with the pull-ups, sit-ups and long-distance running in the physical test project, while the girls are particularly dissatisfied with the long-distance running. On the contrary, in the physical test project, boys prefer to set a long jump, while girls prefer sit-ups and sprints. Not only do students need to strengthen their awareness of physical fitness, but schools also need to improve physical fitness tests based on what students are saying.

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## References

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