



eISSN: 2322-1445

Volume 9, Issue 2, Autumn and Winter 2023

Sociology of Education

Network Data Analysis Application in Drawing the Communication Network to Measure Evolution in Middle Childhood

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Research Paper

Receive: 2023/02/06
Accept: 2023/08/08
Published: 2023/12/11

Keywords:

Network Theory, Development in Middle Childhood, Empathy, Intimacy and Friendship.

Article Cite:

Reyhani M, Manavipour D, Sedaghati Fard M. (2023). Network Data Analysis Application in Drawing the Communication Network to Measure Evolution in Middle Childhood, Sociology of Education. 9(2): 275-284.

Abstract

Purpose: The present study was conducted with the aim of Network data analysis application in drawing the communication network to measure evolution in middle childhood.

Methodology: The present horoscope was a descriptive-analytical psychometric study. The socio-statistics of the present study were all students of Tehran city in elementary school (6 to 12 years old) in the academic year of 2019-2020. The sample was 585 people who were selected by multi-stage cluster sampling method. Middle childhood development questionnaire was used to collect data. The data was analyzed using confirmatory factor analysis of the five-factor structure (flexibility, intimacy and friendship, separation times, physical health and empathy). The reliability of the questionnaire was calculated using Cronbach's alpha coefficient.

Findings: In this research, 585 people were selected as a sample group in the form of multi-stage clusters. The research tool was measuring the transformation in middle childhood. The methods of exploratory and confirmatory factor analysis, criterion validity, convergent-divergent validity were used to check the validity of the scale, and reliability was checked with two methods of internal consistency (Cronbach's alpha) and stability of results (retest) with a two-week interval. Exploratory factor analysis using principal component analysis and varimax rotation led to the extraction of 5 factors (empathy, flexibility, intimacy and friendship, physical health and leisure time).

Conclusion: The results of confirmatory factor analysis confirmed the results of exploratory factor analysis. The reliability analysis of the test showed that the Cronbach's alpha coefficient of the subscales is higher than 0.7. Also, in all subscales, the Pearson correlation coefficient between the two implementations was higher than 0.85. The correlation between the subscales of measuring the development in the middle childhood period confirmed the convergent evidence of the questionnaire. Based on the results of the research, research evidence supports the simultaneous examination and consideration of all five subscales of the Persian version of the Middle Childhood Development Assessment.



<https://doi.org/10.22034/ijcs.2021.541983.1184>



<https://dorl.net/dor/20.1001.1.23221445.1401.15.1.1.0>



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Detailed abstract

Purpose: Today, it is known that individual differences are more quantitative than qualitative, therefore, to measure these differences, a suitable tool must be designed that can determine the different aspects of the differences. Therefore, the measurement must be objective in a special sense, that the test items must be considered fair and that the application of a model is more important than its truth. Psychometrics, the discipline concerned with the measurement and prediction of psychological characteristics, aptitudes, and behavior, plays a central role in scientific psychology, educational measurement, and the structure of our present society. However, despite psychometrics' obvious social relevance, it is usually regarded as a largely technical discipline organized around the analysis of psychometric test data. This portrayal of psychometrics as a conventional academic discipline whose primary aims appear to be purely scientific makes it more difficult to discern any deeper political or social affiliations. So has psychometrics shed its ideological feathers? It seems not so. Despite its technical appearance, social and moral loyalties exist even in the most technical areas of psychometrics, these loyalties imply that psychometrics is a socially and politically valuable scientific discipline and that its statistical methods and assumptions partly reflect value systems. And they should be evaluated in this way. According to the above, we can identify the importance of psychometrics and measurement tools, and since the growth of children and adolescents creates the best opportunity for success in life, the importance of students' well-being has also been highlighted in education policy in recent years. A review of educational policy statements in the Organization for Economic Co-operation and Development (OECD) showed that all the countries surveyed mentioned building students' social and emotional skills as the overall goal of education. As a specific example, the Melbourne Declaration on Educational Goals for Young People states that all young people should become not only successful learners, but also self-confident and creative individuals who describe them as individuals with feelings of worth. , high self-confidence, broad self-belief, awareness, optimism, flexibility, empathy, respect for others, creative skills and maintaining healthy relationships can be considered. Meanwhile, the importance of social and emotional skills is increasingly recognized by education systems and policy makers around the world. The current research was conducted with the aim of drawing the communication network of measuring transformation in the childhood basics course.

Methodology: The present study was a descriptive-analytical psychometric study. The statistical population of the research included all the male and female students of Tehran in the elementary school in the academic year of 2018-2019. Considering that the study instrument contains 77 items, therefore, a minimum of 462 people were needed to examine the factorial structure of the instrument. The sampling method was in the form of multi-stage clusters. In this way, Tehran city was divided into 5 regions: north, south, east, west and center. From each district, five schools were randomly selected. Then he entered the selected schools and one class was randomly selected from each school and 25 students from each class were randomly given a questionnaire based on the entry and exit criteria (the entry criteria include: being a primary school student) willingness to participate in the research and the absence of a stressful event such as the death of a loved one in the last six months. Exclusion criteria include: unwillingness to participate in the research, incomplete filling of the study instrument and the occurrence of a stressful event such as the death of a loved one in the last six months. recent) was placed. In this way, 625 people were selected as the sample size. In the final analysis, 30 people were left out of the final analysis due to not answering most of the questions, and finally 585 people were selected as sample people. In the first step, the English version of the tool, which was approved by the tool makers, was translated into Farsi. Before doing this, written permission was received from the owner of this tool. First, the middle childhood development assessment questionnaire was used using the translation-retranslation method. For this purpose, the middle childhood development assessment questionnaire was translated into Farsi by two English language experts. Then

these two translations were matched to produce the original version. Then, the Farsi version was given to two English language experts to be matched with the original version through the reverse translation process to ensure the accuracy of the Farsi translation. In order to check the validity of 10 experts (3 PhD in psychometrics, 5 PhD in clinical psychology and 2 PhD students in clinical psychology) were asked to evaluate each of the items of the middle childhood development questionnaire as "necessary", "not necessary but useful" "and" it is not necessary to answer. The calculation of the answers was based on the content validity ratio (CVR) formula and compared with the Laushe table (the optimal content validity ratio for 10 experts was 0.62). In the next step, all the items of the middle childhood development assessment questionnaire were examined by experts in terms of simplicity, clarity and relevance, and the content validity index (CVI) was calculated and the value of 0.79 was considered as an acceptable value. In the next step, in order to check the face validity of the Middle Childhood Development Assessment Questionnaire, 30 people from the target community were asked to comment on the items and express the meaningfulness of the items. In this step, verbal and behavioral reactions of people were observed. After confirming the meaningfulness, fluency and fluency of the items by the participants of the target community and confirming the face validity, the middle childhood development assessment questionnaire was given to the sample people. It should be noted that the necessary permits to enter the schools were obtained from the University and Education. A questionnaire was used to collect data: Middle Childhood Development Assessment Questionnaire: This is a self-reporting tool designed by Schonert-Reichl, et al (2013) to assess a child's well-being outside and inside school. This questionnaire contains 77 items and five factors: (1) flexibility (measured using items 7 to 36 and 72 to 76), (2) intimacy and friendship (measured using items 37 to 51 are measured), (3) separation times (measured using items 66 to 70), (4) physical health (using items 57, 61 to 65) and (5) empathy (measured using items 1 to 6) using a five-point Likert scale from completely disagree (1) to completely agree (5) It measures. In the study of Shanert-Rachel et al. (2013) using confirmatory factor analysis, a five-factor structure (flexibility, intimacy and friendship, separation times, physical health and empathy) was verified. The reliability of the questionnaire was calculated using Cronbach's alpha coefficient. Cronbach's alpha coefficient for the factors of flexibility, intimacy and friendship, time of separation, physical health and empathy were obtained 0.75, 0.78, 0.72, 0.78 and 0.85 respectively.

Findings: In this research, 585 people were selected as a sample group in the form of multi-stage clusters. The research tool was measuring the transformation in middle childhood. The methods of exploratory and confirmatory factor analysis, criterion validity, convergent-divergent validity were used to check the validity of the scale, and reliability was checked with two methods of internal consistency (Cronbach's alpha) and stability of results (retest) with a two-week interval. Exploratory factor analysis using principal component analysis and varimax rotation led to the extraction of 5 factors (empathy, flexibility, intimacy and friendship, physical health and leisure time).

Conclusion: The results of confirmatory factor analysis confirmed the results of exploratory factor analysis. The reliability analysis of the test showed that the Cronbach's alpha coefficient of the subscales is higher than 0.7. Also, in all subscales, the Pearson correlation coefficient between the two implementations was higher than 0.85. The correlation between the subscales of measuring the development in the middle childhood period confirmed the convergent evidence of the questionnaire. Based on the results of the research, research evidence supports the simultaneous examination and consideration of all five subscales of the Persian version of the Middle Childhood Development Assessment.