An Analysis Of Multiple Intelligence Scores Among Rural And Urban Students In Morarji Desai Residential Schools

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Abstract:

The present study investigates the differences in Multiple Intelligence (MI) scores between rural and urban students studying at Morarji Desai Residential Schools. Using the two-sample independent t-test, this study examines both the overall MI scores and the component intelligences. Findings indicate significant differences in overall MI and specific intelligence components, favoring urban students. The paper discusses the implications for educational planning and policy, aiming to reduce disparities between rural and urban students.

INTRODUCTION:

Education plays a pivotal role in shaping the cognitive and socio-emotional growth of children. One framework that assesses these varied cognitive strengths is Howard Gardner's Multiple Intelligence (MI) theory, which categorizes human intelligence into eight distinct types. These include verbal/linguistic, logical/mathematical, spatial, bodily-kinesthetic, musical, interpersonal, intrapersonal, and naturalistic intelligences. With the goal of achieving equity in education, understanding the differences in intelligence profiles between rural and urban students is essential, especially in settings like Morarji Desai Residential Schools, which aim to serve underprivileged students.

The primary objective of this study is to examine whether there is a significant difference in the overall MI and component intelligence scores between rural and urban students.

METHODOLOGY:

This study employed an independent two-sample t-test to compare the Multiple Intelligence scores of rural and urban students enrolled in Morarji Desai Residential Schools. A sample of 1,044 students was selected, with 517 from rural backgrounds and 527 from urban backgrounds.

ANALYSIS

Null hypothesis: There is no significant difference between rural and urban students studying at Morarji Desai residential schools with their Multiple Intelligence scores
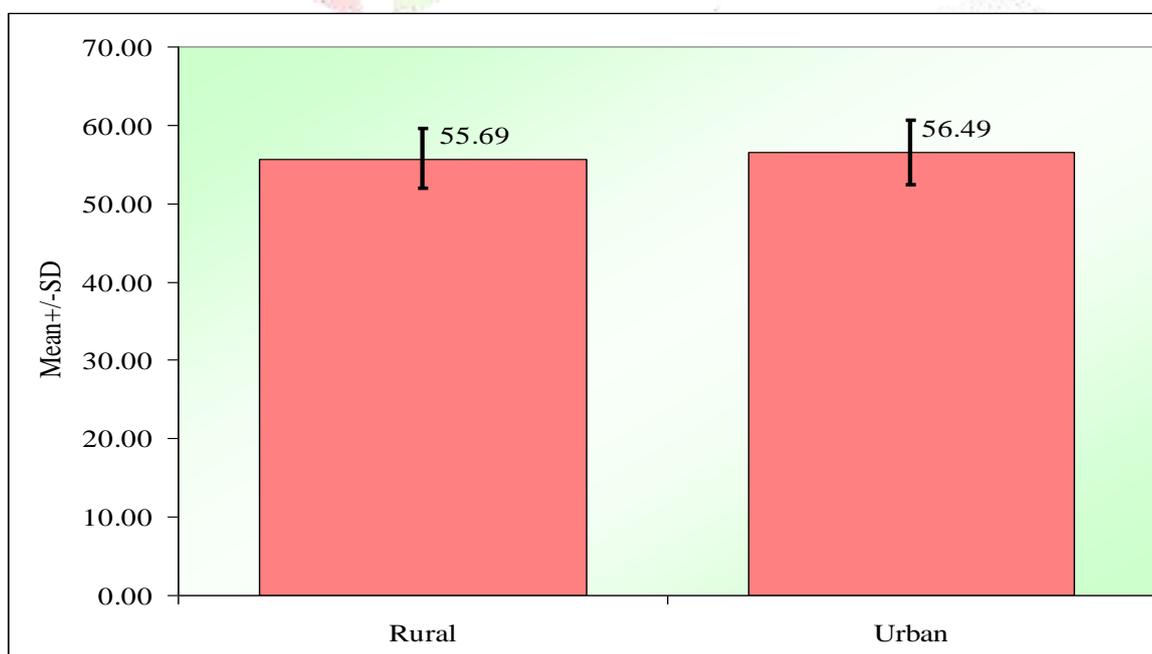
To test the null hypothesis, the two sample independent t test was applied and the results are presented in the following table:

Table: Outcome of two sample independent t test between rural and urban students studying at Morarji Desai residential schools with their Multiple Intelligence scores

Location	n	Mean	SD	SE	t-value	P-value	Signi.
Rural	517	55.69	3.78	0.17	3.2965	0.0010	S
Urban	527	56.49	4.10	0.18			

From the results of the above table, it is seen that, the calculated value of independent t test is 3.2965 with p value=0.0001. The critical value of t at 5% level of significance with 1042 degrees of freedom is 1.9600. It clearly shows that, the calculated value of t is greater than the critical value i.e. 3.2965>1.9600. It means that, a significant difference between rural and urban students studying at Morarji Desai residential schools with their Multiple Intelligence scores. Hence, the null hypothesis is rejected and alternative hypothesis is accepted. In another word, the urban students studying at Morarji Desai residential schools have significant and higher Multiple Intelligence scores as compared to rural students studying at Morarji Desai residential schools. The mean and SD scores are presented in the following figure.

Figure: Comparison of between rural and urban students studying at Morarji Desai residential schools with their Multiple Intelligence scores

Null hypothesis: There is no significant difference between rural and urban students studying at Morarji Desai residential schools with component scores of Multiple Intelligence i.e.

- Verbal/linguistic intelligence
- Logical/mathematical intelligence
- Spatial intelligence
- Bodily-kinaesthetic intelligence
- Musical intelligence
- Interpersonal intelligence
- Intrapersonal intelligence
- Naturalistic intelligence

To test the null hypothesis, the two sample independent t test was applied and the results are presented in the following table:

Table: Outcome of two sample independent t test rural and urban students studying at Morarji Desai residential schools with component scores of Multiple Intelligence

Variable	Location	n	Mean	SD	SE	$\lvert t \rvert$-value	P-value	Signi.
Verbal/linguistic intelligence	Rural	517	6.95	1.39	0.06	1.8521	0.0643	NS
	Urban	527	7.12	1.44	0.06			
Logical/mathematical intelligence	Rural	517	7.02	1.45	0.06	0.5984	0.5497	NS
	Urban	527	7.07	1.40	0.06			
Spatial intelligence	Rural	517	6.85	1.37	0.06	2.1491	0.0319	S
	Urban	527	7.03	1.41	0.06			
Bodily-kinaesthetic intelligence	Rural	517	7.00	1.43	0.06	0.7322	0.4642	NS
	Urban	527	7.06	1.41	0.06			
Musical intelligence	Rural	517	6.95	1.38	0.06	1.7811	0.0752	NS
	Urban	527	7.10	1.43	0.06			
Interpersonal intelligence	Rural	517	6.96	1.42	0.06	1.5857	0.1131	NS
	Urban	527	7.10	1.45	0.06			
Intrapersonal intelligence	Rural	517	6.98	1.36	0.06	0.3057	0.7599	NS
	Urban	527	6.95	1.41	0.06			
Naturalistic intelligence	Rural	517	6.99	1.45	0.06	0.7978	0.4251	NS
	Urban	527	7.06	1.40	0.06			

From the results of the above table, it is seen that,

- When comparison rural and urban students with first component of multiple intelligence i.e. verbal/linguistic intelligence scores, the calculated value of independent t test is 1.8521 with p value=0.0643. The critical value of t at 5% level of significance with 1042 degrees of freedom is 1.9600. It clearly shows that, the calculated value of t is lesser than the critical value i.e. 1.8521<1.9600. It means that, a significant difference between rural and urban students studying at Morarji Desai residential schools with first component of multiple intelligence i.e. verbal/linguistic intelligence scores. Hence, the null hypothesis is accepted and alternative hypothesis is rejected. In

another word, the rural and urban students studying at Morarji Desai residential schools have similar verbal/linguistic intelligence scores.

- When comparison rural and urban students with second component of multiple intelligence i.e. logical/mathematical intelligence scores, the calculated value of independent t test is 0.5984 with p value=0.0018. The critical value of t at 5% level of significance with 1042 degrees of freedom is 1.9600. It clearly shows that, the calculated value of t is lesser than the critical value i.e. 0.5984>1.9600. It means that, no significant difference between rural and urban students studying at Morarji Desai residential schools with second component of multiple intelligence i.e. logical/mathematical intelligence scores. Hence, the null hypothesis is accepted and alternative hypothesis is rejected. In another word, the rural and urban students studying at Morarji Desai residential schools have similar logical/mathematical intelligence scores.

- When comparison rural and urban students with third component of multiple intelligence i.e. spatial intelligence scores, the calculated value of independent t test is 2.1491 with p value=0.0319. The critical value of t at 5% level of significance with 1042 degrees of freedom is 1.9600. It clearly shows that, the calculated value of t is greater than the critical value i.e. 2.1491>1.9600. It means that, a significant difference between rural and urban students studying at Morarji Desai residential schools with third component of multiple intelligence i.e. spatial intelligence scores. Hence, the null hypothesis is rejected and alternative hypothesis is accepted. In another word, the urban students studying at Morarji Desai residential schools have significant and higher spatial intelligence scores as compared to rural students studying at Morarji Desai residential schools.

- When comparison rural and urban students with fourth component of multiple intelligence i.e. bodily-kinaesthetic intelligence scores, the calculated value of independent t test is 0.7322 with p value=0.7222. The critical value of t at 5% level of significance with 1042 degrees of freedom is 1.9600. It clearly shows that, the calculated value of t is lesser than the critical value i.e. 0.7322<1.9600. It means that, no significant difference between rural and urban students studying at Morarji Desai residential schools with fourth component of multiple intelligence i.e. bodily-kinaesthetic intelligence scores. Hence, the null hypothesis is accepted and alternative hypothesis is rejected. In another word, the rural and urban students studying at Morarji Desai residential schools have similar bodily-kinaesthetic intelligence.

- When comparison rural and urban students with fourth component of multiple intelligence i.e. musical intelligence scores, the calculated value of independent t test is 1.7811 with p value=0.0752. The critical value of t at 5% level of significance with 1042 degrees of freedom is 1.9600. It clearly shows that, the calculated value of t is lesser than the critical value i.e. 1.7811<1.9600. It means that, no significant difference between rural and urban students studying at Morarji Desai residential schools with fourth component of multiple intelligence i.e. musical intelligence scores. Hence, the null hypothesis is accepted and alternative hypothesis is rejected. In another word, the rural and urban students studying at Morarji Desai residential schools have similar musical intelligence.

- When comparison rural and urban students with fourth component of multiple intelligence i.e. interpersonal intelligence scores, the calculated value of independent t test is 1.5857 with p value=0.1131. The critical value of t at 5% level of significance with 1042 degrees of freedom is 1.9600. It clearly shows that, the calculated value of t is lesser than the critical value i.e. 1.7811<1.9600. It means that, no significant difference between rural and urban students studying at Morarji Desai residential schools with fourth component of multiple intelligence i.e. interpersonal intelligence scores. Hence, the null hypothesis is accepted and alternative hypothesis is rejected. In another word, the rural and urban students studying at Morarji Desai residential schools have similar interpersonal intelligence.

- When comparison rural and urban students with fourth component of multiple intelligence i.e. intrapersonal intelligence scores, the calculated value of independent t test is 0.3057 with p value=0.7599. The critical value of t at 5% level of significance with 1042 degrees of freedom is 1.9600. It clearly shows that, the calculated value of t is lesser than the critical value i.e. 0.3057<1.9600. It means that, no significant difference between rural and urban students studying at Morarji Desai residential schools with fourth component of multiple intelligence i.e. intrapersonal intelligence scores. Hence, the null hypothesis is accepted and alternative hypothesis is rejected. In another word, the rural and urban students studying at Morarji Desai residential schools have similar intrapersonal intelligence.

- When comparison rural and urban students with fourth component of multiple intelligence i.e. naturalistic intelligence scores, the calculated value of independent t test is 0.3057 with p value=0.7599. The critical value of t at 5% level of significance with 1042 degrees of freedom is 1.9600. It clearly shows that, the calculated value of t is lesser than the critical value i.e. 0.3057<1.9600. It means that, no significant difference between rural and urban students studying at Morarji Desai residential schools with fourth component of multiple intelligence i.e. naturalistic intelligence scores. Hence, the null hypothesis is accepted and alternative hypothesis is rejected. In another word, the rural and urban students studying at Morarji Desai residential schools have similar naturalistic intelligence.

Figure: Comparison between rural and urban students studying at Morarji Desai residential schools with components scores of multiple intelligence
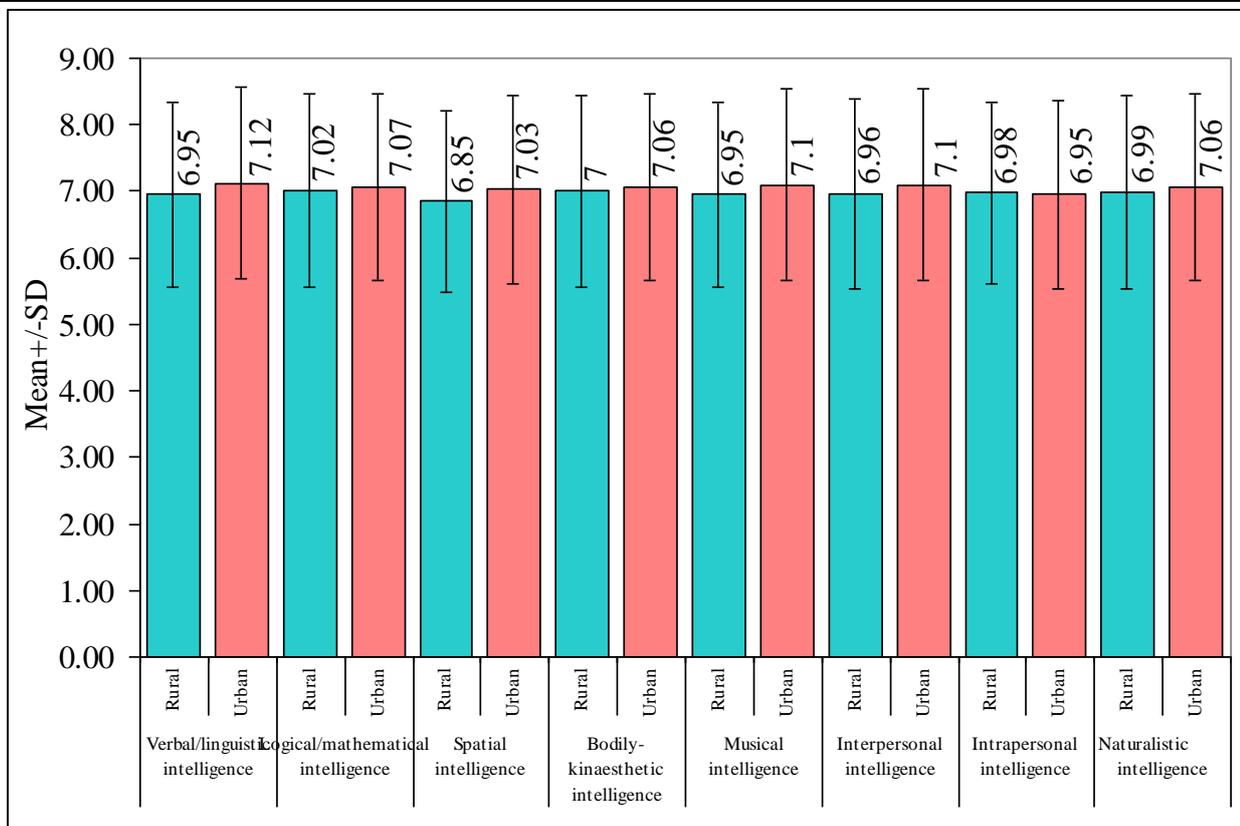
CONCLUSION:

This study demonstrates that while overall MI scores differ significantly between rural and urban students, only spatial intelligence shows a marked difference among the component intelligences. The findings emphasize the need for targeted educational interventions to bridge the gap between rural and urban students, particularly in areas where rural students may lack exposure to spatial reasoning opportunities.

BIBLIOGRAPHY

- Gardner, H. (1983). Frames of mind: The theory of multiple intelligences. Basic Books.

- Johnson, R. A., & Wichern, D. W. (2007). Applied multivariate statistical analysis (6th ed.). Pearson Prentice Hall.

- Kaur, M., & Singh, R. (2017). A study on multiple intelligences and academic achievement of students. International Journal of Educational Research and Development, 6(2), 45-53.

- Kushwaha, A., & Kumar, P. (2020). Influence of language and cultural background on cognitive abilities in school children. Journal of Educational Psychology, 12(1), 34-48. https://doi.org/10.1037/edu0000123

- Smith, M. K. (2002). Howard Gardner and multiple intelligences. The Encyclopedia of Informal Education. Retrieved from http://infed.org/mobi/howard-gardner-multiple-intelligences-and-education/

- Tabachnick, B. G., & Fidell, L. S. (2013). Using multivariate statistics (6th ed.). Pearson.

- Woolfolk, A. (2016). Educational psychology (13th ed.). Pearson.