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'T' TEST ANALYSIS OF DIFFERENCE CRITERION VARIABLES BETWEEN URBAN AND RURAL SCHOOL BOYS WITH DIFFERENT AGE GROUP CATEGORIES

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ABSTRACT

The results pertaining to the significant difference between the mean scores of selected physical growths of standing height, body weight, chest circumference, leg length and arm length of urban and rural school boys among different age groups by using 't' test analysis.

KEYWORDS : 'T' Test Analysis, Urban and Rural School Boys.

INTRODUCTION

1. STANDING HEIGHT

Table–1.1

Table shows variable, group, sample number (N), mean (M), standard deviation (SD), 't' value and level of significance in the Standing Height scores between urban and rural school boys of different age groups.

Variable	Groups		N	M	SD	't' value	Level of Significance
Standing Height	10 to 11 years	Urban	150	139.920	8.516	6.12	**
		Rural	150	134.746	5.875		
	12 to 13 years	Urban	150	149.066	10.633	6.47	**
		Rural	150	142.106	7.768		
	14 to 15 years	Urban	150	158.966	9.499	1.76	NS
		Rural	150	156.713	12.403		

*Significant at 0.05 level

Table-1.1 shows that the obtained 't' value 6.12 is higher than the table 't' value of 1.97 at 0.05 level of significance (df=298) and hence it is significant at 0.05 level. Therefore the stated null hypothesis is rejected and in its place an alternative hypothesis has been formulated that "there is a significant difference in the standing height between urban and rural school boys of 10 to 11 years age group. It is observed from the table that urban school boys have higher mean scores (139.920) in the standing height as compared to rural school boys (134.746) in the age group of 10 to 11 years. This implies statistically that there is a significant difference between urban and rural school boys in their standing height. It is concluded that the urban school boys had greater physical growth in standing height than rural school boys of 10 to 11 years age group.

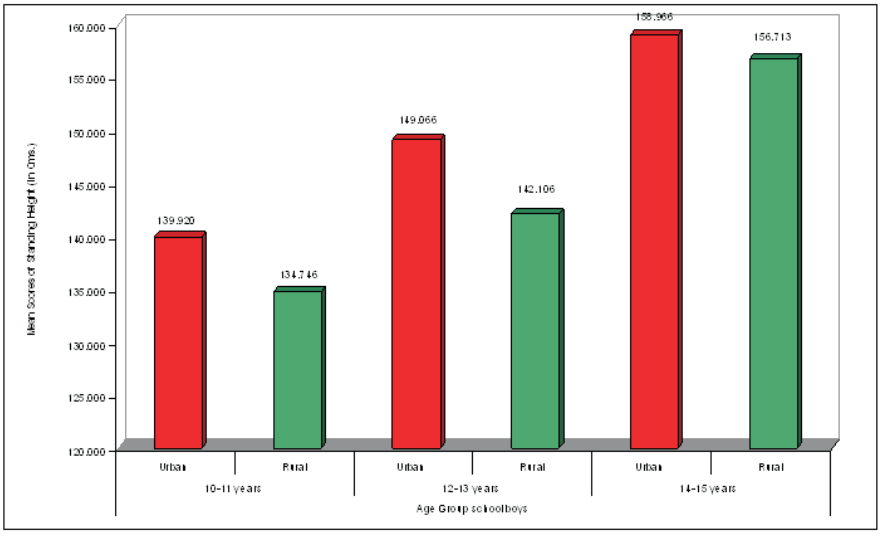
The Table-1.1 illustrates that the obtained 't' value 6.47 is higher than the table 't' value of 1.97 at 0.05 level of significance (df=298) and hence it is significant at 0.05 level. Therefore the stated null hypothesis is rejected and in its place an alternative hypothesis has been formulated that "there is a significant difference in the standing height between urban and rural school boys of 12 to 13 years age group. It is observed from the table that urban school boys have higher mean scores (149.066) in standing height as compared to rural school boys (142.106) in the age group of 12 to 13 years. This implies statistically that there is a significant difference between urban and rural school boys in their standing height. It is concluded that the urban school boys had greater physical growth in standing height than rural school boys of 12 to 13 years age group.

The table-1.1 further confirms that the obtained 't' value 1.76 is less than the table 't' value of 1.97 at 0.05 level of significance (df=298) and hence it is not significant even at 0.05 level. Therefore the stated null hypothesis is accepted that "there is no significant difference in the standing height between urban and rural school boys of 14 to 15 years age group. This implies statistically that there is no significant difference between urban and rural school boys in their standing height. It is concluded that both urban and rural school boys have similar type of physical growth in the standing height in the age group of 14 to 15 years age group.

The comparison of urban and rural school boys mean scores of standing height among different age groups are given in the graphical presentation in Fig.1.1.

Fig.1.1.

Bar graph shows comparison of urban and rural school boys' mean scores of Standing Height among different age groups.



2. BODY WEIGHT

Table–2.2

Table shows variable, group, sample number (N), mean (M), standard deviation (SD), 't' value and level of significance in Body Weight scores between urban and rural school boys of different age group.

Variable	Groups		N	M	SD	't' value	Level of Significance
Body Weight	10 to 11 years	Urban	150	31.240	8.623	5.43	**
		Rural	150	27.006	4.064		
	12 to 13 years	Urban	150	36.033	8.990	4.99	**
		Rural	150	31.433	6.812		
	14 to 15 years	Urban	150	42.573	9.790	0.74	NS
		Rural	150	41.666	11.145		

*Significant at 0.05 level

Table-2.2 shows that the obtained 't' value 5.43 is higher than the table 't' value of 1.97 at 0.05 level of significance (df=298) and hence it is significant at 0.05 level. Therefore the stated null hypothesis is rejected and in its place an alternative hypothesis has been formulated that "there is a significant difference in the Body Weight between urban and rural school boys of 10 to 11 years age groups It is observed from the table that urban school boys have more mean scores (31.240) in the Body Weight as compared to rural school boys (27.006) in the age group of 10 to 11 years. This implies statistically that there is a significant difference between urban and rural school boys in their Body Weight. It is concluded that the urban school boys had greater physical growth in Body Weight than rural school boys of 10 to 11 years age group.

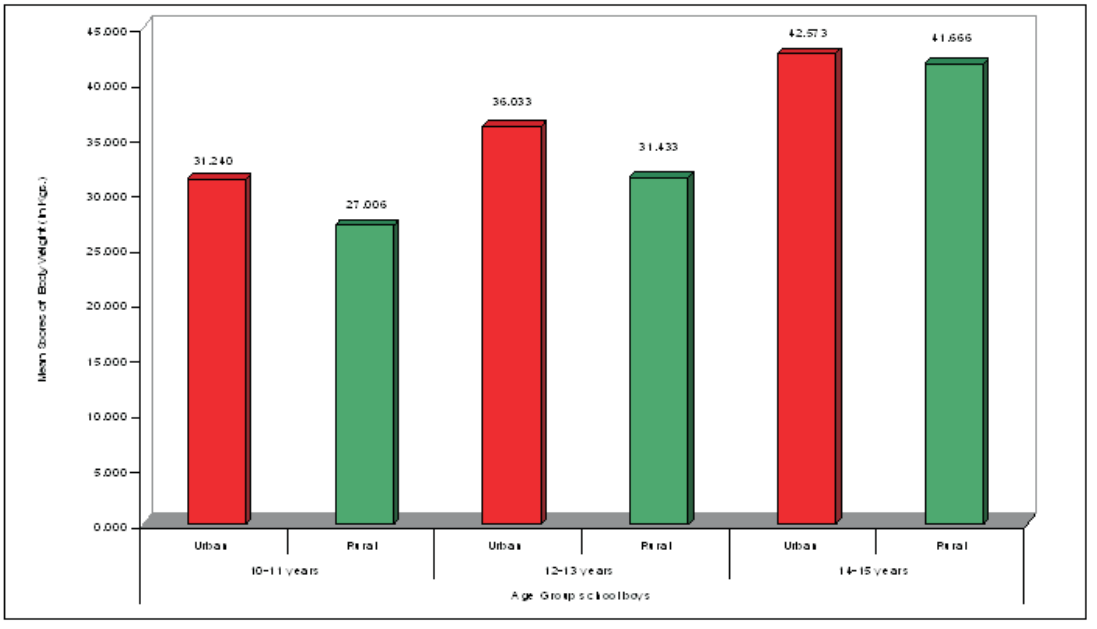
The Table-2.2 illustrates that the obtained 't' value 4.99 is higher than the table 't' value of 1.97 at 0.05 level of significance (df=298) and hence it is significant at 0.05 level. Therefore the stated null hypothesis is rejected and in its place an alternative hypothesis has been formulated that "there is a significant difference in the Body Weight between urban and rural school boys of 12 to 13 years age group. It is observed from the table that urban school boys have more mean scores (36.033) in the Body Weight as compared to rural school boys (31.433) in the age group of 12 to 13 years. This implies statistically that there is a significant difference between urban and rural school boys in their Body Weight. It is concluded that the urban school boys had greater physical growth in Body Weight than rural school boys of 12 to 13 years age group.

The table-2.2 further confirms that the obtained 't' value 0.74 is less than the table 't' value of 1.97 at 0.05 level of significance (df=298) and hence it is not significant even at 0.05 level. Therefore the stated null hypothesis is accepted that "there is no significant difference in the Body Weight between urban and rural school boys of 14 to 15 years age group. This implies statistically that there is no significant difference between urban and rural school boys in their Body Weight. It is concluded that both urban and rural school boys have similar type of physical growth in Body Weight in the age group of 14 to 15 years age group.

The comparison of urban and rural school boys mean scores of Body Weight of different age groups are given in the graphical presentation in Fig. 2.2

Fig. 2.2

Bar graph shows comparison of urban and rural school boys' mean scores of Body Weight among different age groups.



3. CHEST CIRCUMFERENCE

Table–3.3

Table shows variable, group, sample number (N), mean (M), standard deviation (SD), 't' value and level of significance in Chest Circumference scores between urban and rural school boys of different age group.

Variable	Groups		N	M	SD	't' value	Level of Significance
Chest Circumference	10 to 11 years	Urban	150	62.373	13.072	0.18	NS
		Rural	150	62.580	5.317		
	12 to 13 years	Urban	150	71.226	8.256	3.63	**
		Rural	150	67.786	8.181		
	14 to 15 years	Urban	150	58.026	21.243	9.20	**
		Rural	150	76.060	10.371		

*Significant at 0.05 level

The table-3.3 confirms that the obtained 't' value 0.18 is less than the table 't' value of 1.97 at 0.05 level of significance (df=298) and hence it is not significant even at 0.05 level. Therefore the stated null hypothesis is accepted that "there is no significant difference in the Chest Circumference between urban and rural school boys of 10 to 11 years age group. This implies statistically that there is no significant difference between urban and rural school boys in their Chest Circumference. It is concluded that both urban and rural school boys have similar type of physical growth in the Chest Circumference in

the age group of 10 to 11 years age group.

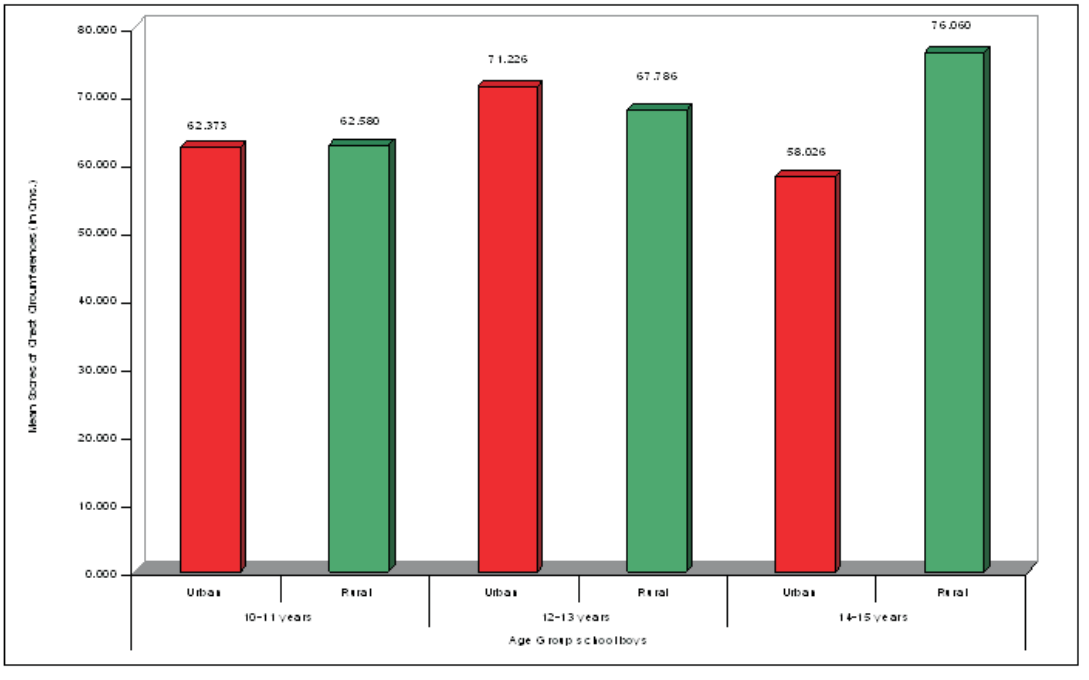
Table-3.3 shows that the obtained 't' value 3.63 is higher than the table 't' value of 1.97 at 0.05 level of significance (df=298) and hence it is significant at 0.05 level. Therefore the stated null hypothesis is rejected and in its place an alternative hypothesis has been formulated that "there is a significant difference in the Chest Circumference between urban and rural school boys of 12 to 13 years age group. It is observed from the table that urban school boys have higher mean scores (71.226) in the chest circumferences as compared to rural school boys (67.786) in the age group of 12 to 13 years. This implies statistically that there is a significant difference between urban and rural school boys in their Chest Circumferences. It is concluded that the urban school boys had greater physical growth in chest circumference than rural school boys of 12 to 13 years age group.

The Table-3.3 further illustrates that the obtained 't' value 9.20 is higher than the table 't' value of 1.97 at 0.05 level of significance (df=298) and hence it is significant at 0.05 level. Therefore the stated null hypothesis is rejected and in its place an alternative hypothesis has been formulated that "there is a significant difference in the Chest Circumferences between urban and rural school boys of 14 to 15 years age group. It is observed from the table that rural school boys have higher mean scores (76.060) in the Chest Circumferences as compared to urban school boys (58.026) in the age group of 14 to 15 years. This implies statistically that there is a significant difference between urban and rural school boys in their chest circumferences. It is concluded that the rural school boys had greater physical growth in chest circumferences than urban school boys of 14 to 15 years age group.

The comparison of urban and rural school boys mean scores of Chest Circumferences of different age groups are given in the graphical presentation in Fig.3.3.

Fig.3.3

Bar graph shows comparison of urban and rural school boys mean scores of Chest Circumference among different age groups.



4. LEG LENGTH

Table–4.4

Table shows variable, group, sample number (N), mean (M), standard deviation (SD), 't' value and level of significance in the Leg Length scores between urban and rural school boys of different age groups.

Variable	Groups		N	M	SD	't' value	Level of Significance
Leg Length	10 to 11 years	Urban	150	78.046	14.577	0.07	NS
		Rural	150	78.140	4.838		
	12 to 13 years	Urban	150	85.073	6.129	4.12	**
		Rural	150	81.746	7.740		
	14 to 15 years	Urban	150	76.826	25.679	7.45	**
		Rural	150	94.086	11.997		

*Significant at 0.05 level

The table-4.4 confirms that the obtained 't' value 0.07 is less than the table 't' value of 1.97 at 0.05 level of significance (df=298) and hence it is not significant even at 0.05 level. Therefore the stated null hypothesis is accepted that "there is no significant difference in the Leg Length between urban and rural school boys of 10 to 11 years age group." This implies statistically that there is no significant difference between urban and rural school boys in their Leg Length. It is concluded that both urban and rural school boys have similar type of physical growth in Leg Length in the age group of 10 to 11 years age group.

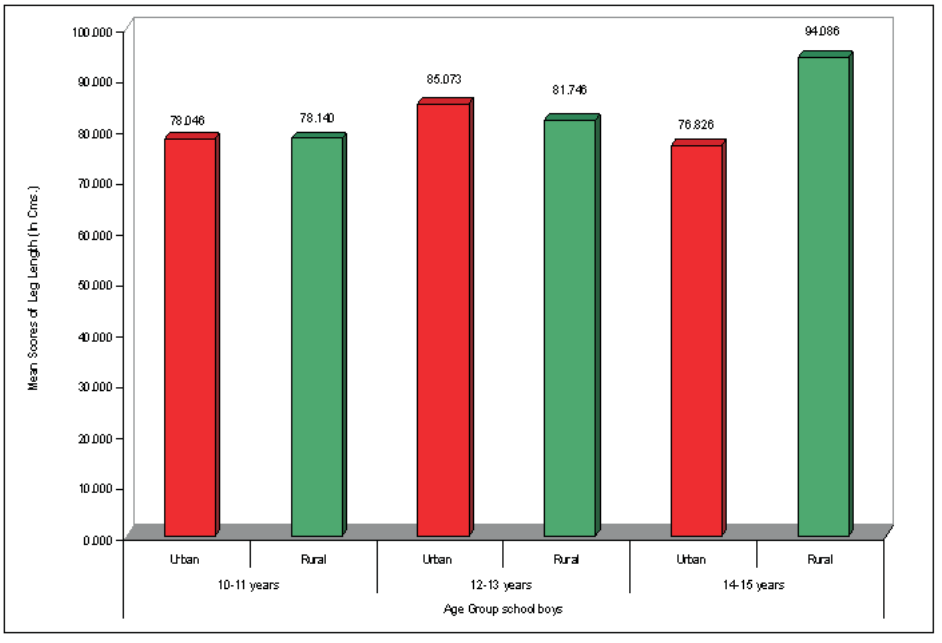
Table-4.4 shows that the obtained 't' value 4.12 is higher than the table 't' value of 1.97 at 0.05 level of significance (df=298) and hence it is significant at 0.05 level. Therefore the stated null hypothesis is rejected and in its place an alternative hypothesis has been formulated that "there is a significant difference in the Leg Length between urban and rural school boys of 12 to 13 years age group." It is observed from the table that rural school boys have higher mean scores (87.746) in Leg Length as compared to urban school boys (85.073) in the age group of 12 to 13 years. This implies statistically that there is a significant difference between urban and rural school boys in their Leg Length. It is concluded that the rural school boys had greater physical growth in Leg Length than urban school boys of 12 to 13 years age group.

The Table-4.4 further illustrates that the obtained 't' value 7.45 is higher than the table 't' value of 1.97 at 0.05 level of significance (df=298) and hence it is significant at 0.05 level. Therefore the stated null hypothesis is rejected and in its place an alternative hypothesis has been formulated that "there is a significant difference in the Leg Length between urban and rural school boys of 14 to 15 years age group." It is observed from the table that rural school boys have higher mean scores (94.086) in the Leg Length as compared to urban school boys (76.826) in the age group of 14 to 15 years. This implies statistically that there is a significant difference between urban and rural school boys in their Leg Length. It is concluded that the rural school boys had greater physical growth in Leg Length than urban school boys of 14 to 15 years age group.

The comparison of urban and rural school boys mean scores of Leg Length among different age groups are given in the graphical presentation in Fig.4.4.

Fig.4.4

Bar graph shows comparison of urban and rural school boys' mean scores of Leg Length among different age groups.



5. ARM LENGTH

Table–5.5

Table shows variable, group, sample number (N), mean (M), standard deviation (SD), 't' value and level of significance in the Arm Length scores between urban and rural school boys of different age groups.

Variable	Groups		N	M	SD	't' value	Level of Significance
Arm Length	10 to 11 years	Urban	150	138.740	9.839	2.88	*
		Rural	150	136.053	5.791		
	12 to 13 years	Urban	150	148.720	11.119	5.46	*
		Rural	150	142.333	9.020		
	14 to 15 years	Urban	150	160.953	9.803	2.70	*
		Rural	150	157.606	11.565		

*Significant at 0.05 level

Table-5.5 shows that the obtained 't' value 2.88 is higher than the table 't' value of 1.97 at 0.05 level of significance (df=298) and hence it is significant at 0.05 level. Therefore the stated null hypothesis is rejected and in its place an alternative hypothesis has been formulated that "there is a significant difference in the Arm Length between urban and rural school boys of 10 to 11 years age group. It is observed from the table that rural school boys have higher mean scores (138.740) in Arm Length as compared to urban school boys (136.053) in the age group of 10 to 11 years. This implies

statistically that there is a significant difference between urban and rural school boys in their Arm Length. It is concluded that the rural school boys had greater physical growth in the Arm Length than urban school boys of 10 to 11 years age group.

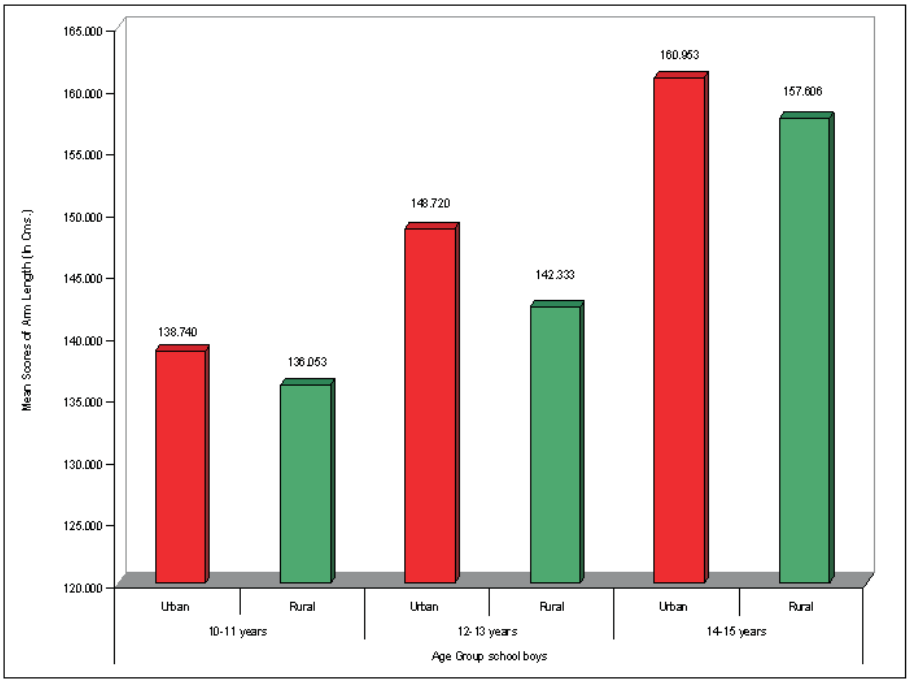
Table-5.5 shows that the obtained 't' value 5.46 is higher than the table 't' value of 1.97 at 0.05 level of significance (df=298) and hence it is significant at 0.05 level. Therefore the stated null hypothesis is rejected and in its place an alternative hypothesis has been formulated that "there is a significant difference in the Arm Length between urban and rural school boys of 12 to 13 years age group. It is observed from the table that rural school boys have higher mean scores (148.720) in Arm Length as compared to urban school boys (142.333) in the age group of 12 to 13 years. This implies statistically that there is a significant difference between urban and rural school boys in their Arm Length. It is concluded that the rural school boys had greater physical growth in Arm Length than urban school boys of 12 to 13 years age group.

The Table-5.5 further illustrates that the obtained 't' value 2.70 is higher than the table 't' value of 1.97 at 0.05 level of significance (df=298) and hence it is significant at 0.05 level. Therefore the stated null hypothesis is rejected and in its place an alternative hypothesis has been formulated that "there is a significant difference in the Arm Length between urban and rural school boys of 14 to 15 years age group. It is observed from the table that rural school boys have higher mean scores (160.953) in the Arm Length as compared to rural school boys (157.606) in the age group of 14 to 15 years. This implies statistically that there is a significant difference between urban and rural school boys in their Arm Length. It is concluded that the urban school boys had greater physical growth in Arm Length than rural school boys of 14 to 15 years age group.

The comparison of urban and rural school boys mean scores of Arm Length among different age groups are given in the graphical presentation in Fig.5.5.

Fig.5.5

Bar graph shows comparison of urban and rural school boys mean scores of Arm Length among different age groups.



CONCLUSION=

Balance represents a complex integration of mechanical, sensory and motor processing strategies. The coordinative and balancing abilities in rural schools boys are found to higher as compared to urban school children in all age groups. This is due to differences in food habits, environment, locality, nutritional status and socio economic status in rural and urban areas.

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