CHAPTER-III
METHODOLOGY OF THE STUDY

3.1.0. Introduction

This chapter expounds on the methodology employed in the present research study. This chapter presents an overview of the research design, the population, the sample, and the sampling techniques. It also describes the research tools utilized for data collection and the statistical techniques employed for data analysis in the study.

3.2.0. Design of the study

The study is descriptive in nature. The study falls under the quantitative type of research because quantitative data referring to the academic achievement, social support, and achievement motivation of the Surjapuri students were collected from a large sample group, and such data were analyzed with the help of the quantitative method to reach a meaningful conclusion. In the study, the Surjapuri students' academic achievement is considered the dependent variable. In contrast, the social support and achievement motivation of the Surjapuri students were considered independent variables. The details of the objective-wise methodology followed in the present study are given below.

Tabe-3.1 Detail objective-wise methodology of the study

Sl. No.	Objectives of the study	Methodology used to achieve the objectives
1	To identify the level of academic achievement among class X^{th} Surjapuri students.	Independent t-test
2	To assess the level of social support available among class X^{th} Surjapuri students.	Independent t-test
3	To analyze the level of achievement motivation among class X^{th} Surjapuri students.	Independent t-test
4	To find out the relationship between academic achievement and social support for class X^{th} Surjapuri students.	Pearson Coefficient of Correlation
5	To investigate the relationship between academic achievement and achievement motivation of class X^{th} Surjapuri students.	Pearson Coefficient of Correlation
6	To examine the relationship between social support and achievement motivation of class X^{th} Surjapuri students.	Pearson Coefficient of Correlation

3.3.0. Locale of the study

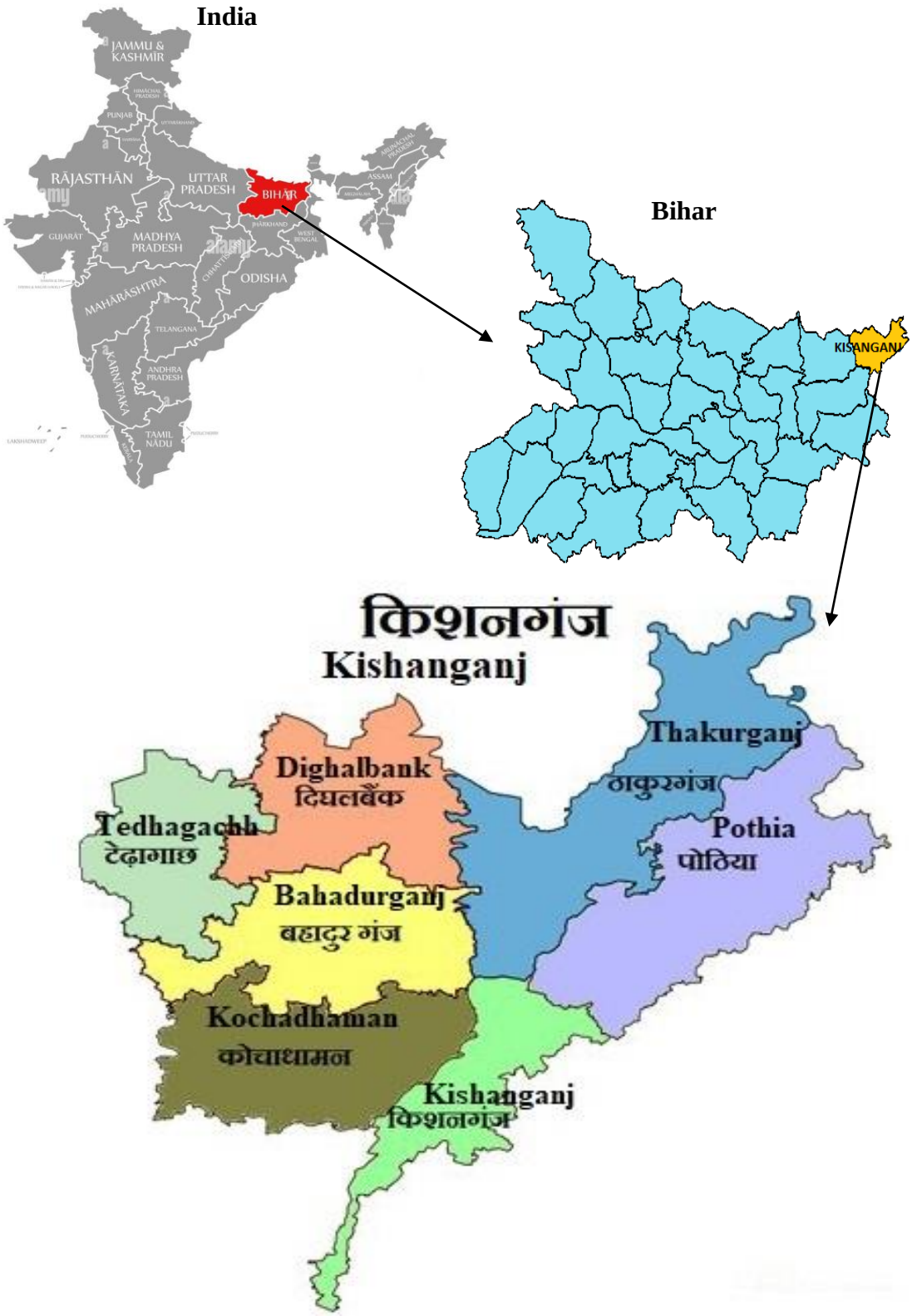

Fig. 3.1: Area of study

Source- mapsofindia.com

3.4.0. Population of the study

In this study, all the Surjapuri students studying in class X^{th} of Kishanganj district are the population of the present study; the total population for the present study is 16015.

3.5.0. Sample size of the study

There are several methods of sample size determination. The popular calculating methods to determine the sample size from finite populations are the Taro Yamane and Cochran formulas, which are most commonly used. Here, the Taro Yamane formula (Yamane, 1967) has been used with a 95% confidence level and a .025 margin of error to determine the sample size for the study (Adam, 2020). The Taro Yamane formula has been illustrated as follows: $n\frac{N}{1+N((e)^2}$

Where **n**=sample size

N= Total number of population (universe)

e=margin of error

Here, N=16015

e=.025 % (margin of error is decided by researchers)

$$\mathbf{n=\frac{16015}{1+16015\ (0.025)^2}}$$

$$\mathbf{=\frac{16015}{1+16015(0.000625)}}$$

$$\mathbf{=\frac{16015}{11}} = 1454.82$$

n=1455

Hence, after calculating the study's sample size using the Taro Yamane formula, the minimum required number of samples is n=1455, which increased to 1602 due to not avoiding the students who responded during the field survey. This increased sample size also covers 10% of the total population.

3.6.0. Sampling technique

Stratified sampling: There are four districts of Bihar where the Surjapuri community is concentrated; these districts are Purnea, Katihar, Araria, and Kishanganj; among these four districts, mainly Kishanganj is the land of the Surjapuri community, or Kishanganj is Surjapuri community concentrated district. The researcher selected Kishanganj and its three blocks randomly using the lottery method. Employing the stratified sampling method, the researcher divided the whole population into three

strata, namely place of residence (rural and urban), gender (male and female), and socio-economic (APL and BPL). In the year 2022-23, from Kishanganj district, 16015 students appeared in the X^{th} class board examination conducted by the Bihar School Examination Board (BSEB) Patna. The rural and urban population was further divided into sub-strata, i.e., male and female, and APL and BPL categories. For sampling purposes, the researcher took 10% of students from each population stratum, totaling 1602. In this sense, the researcher employed a proportionate stratified random sampling technique because students were taken from each stratum of students.

Stratified sampling was chosen for the present study because it ensured the representation of all key sub-groups based on **place of residence (rural and urban)**, **gender (male and female)**, and **socio-economic status (APL and BPL)**, accounting for population heterogeneity, facilitating meaningful comparisons, improving the precision of results, and aligning with the study's objectives. This method was particularly appropriate for studying the Surjapuri community, where diversity in socio-economic status, place of residence, and gender may significantly influence the educational outcomes of the students of the community.

The sample distribution for the present study can be seen in table 3.2.

Table 3.2: Showing the distribution of the sample

Blok & No. of sample	**Name of Schools**	**Place of Residence**		**Gender**		**Socio-economic status**	
Kishanganj 534	UHS Pichla UHS Belwa HS Singhia	Rural	405	Male	170	APL	58
						BPL	112
				Female	235	APL	76
						BPL	159
	NHS Kish. HS Kish. GHS Kish.	Urban	129	Male	62	APL	20
						BPL	42
				Female	67	APL	22
						BPL	45
Bahadurganj 534	NAHS Gangi	Rural	405	Male	170	APL	45
						BPL	125

	UHS Desiatoli UHS Tawapara UHS Nishdhara			Female	235	APL	66
						BPL	169
	RHS Bahadurganj PGHS Bahadurganj	Urban	129	Male	62	APL	12
						BPL	50
				Female	67	APL	18
						BPL	49
Thakurganj 534	UHS Bholmara UHS Rasia UHS Ruidhasa UHS Rajagao UHS Jaglabhita	Rural	405	Male	170	APL	57
						BPL	113
				Female	235	APL	72
						BPL	163
	HS Thakurganj PGHS Thakurganj HS Powakhali	Urban	129	Male	62	APL	19
						BPL	43
				Female	67	APL	26
						BPL	41
Total	**1602**	**1602**		**1602**		**1602**	

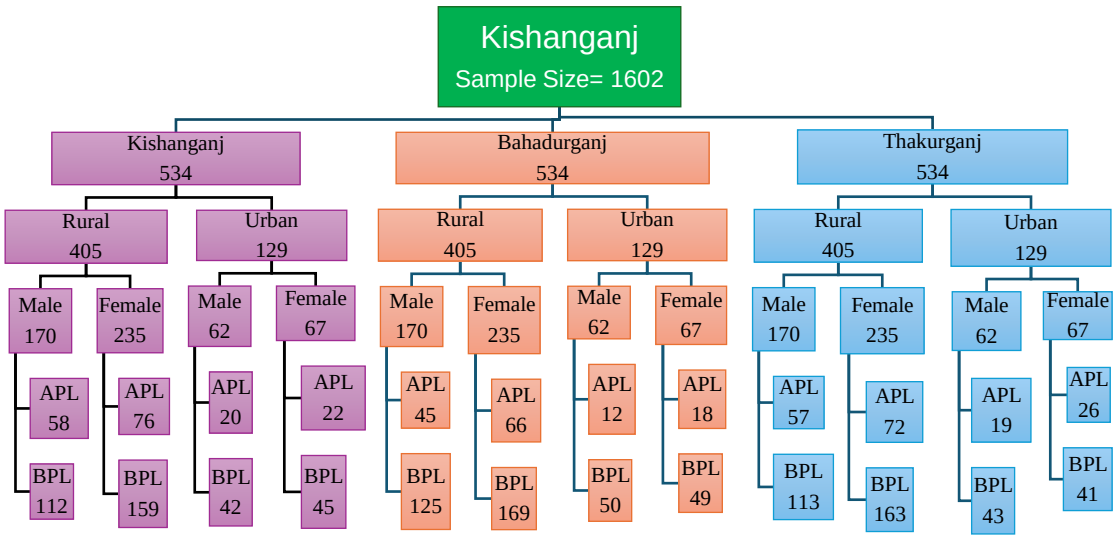

Fig. 3.2: Flowchart showing the sample distribution of the study

Table 3.3: Gender, Area, and Socio-Economic Status wise distribution of Sample

Demographic profile	Category of variables	Frequency	Percent (%)
Gender	Male	696	43.4
	Female	906	56.6
	Total	1602	100.0
Area of residence	Rural	1215	75.8
	Urban	387	24.2
	Total	1602	100.0
Socio-Economic Status	APL	491	30.6
	BPL	1111	69.4
	Total	1602	100.0

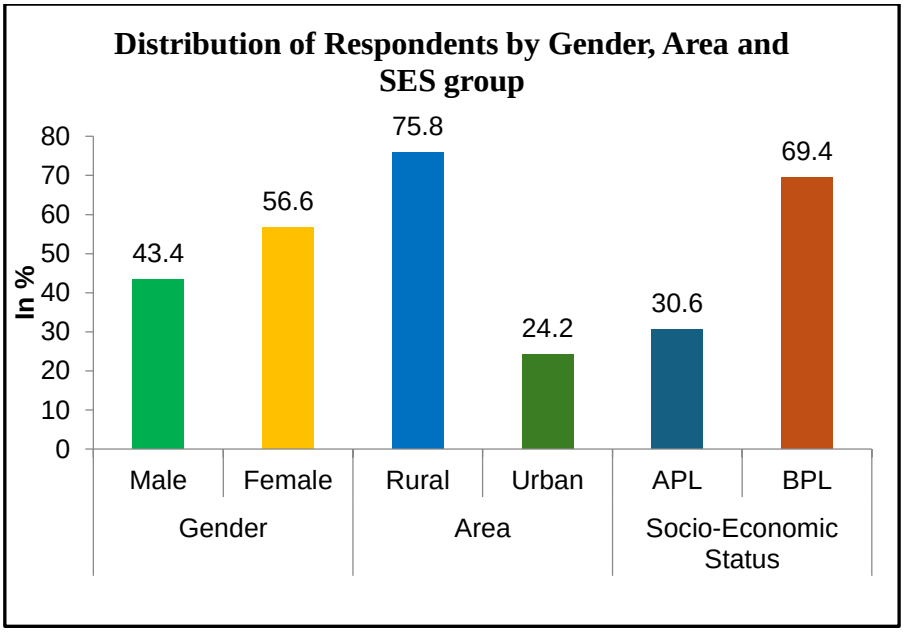

Fig. 3.3: Distribution of sample by Gender, Area, and Socio-Economic Status shown in the bar diagram

3.7.0. Tools used in the study

The researcher employed the following tools for data collection:

- Social Support Assessment Scale.
- Deo-Mohan Achievement Motivation (n-Ach) Scale.
- Academic Achievement Scores obtained by the students in class Xth board examination conducted by the Bihar School Examination Board (BSEB) Patna.

Though the Social Support Assessment Scale was prepared and standardized in English, for better understanding of the participants, it was translated into Hindi language. The Hindi translated scale was endorsed as equivalent by a professor of the Hindi department of Kazi Nazrul Islam University, Asansol, West Bengal. In the case of the Achievement Motivation Scale, the Hindi version of the said tool was adopted in the present study.

3.7.1. Description of the Social Support Assessment Scale

The researcher developed the social support assessment scale to collect data on the availability of social support from the Surjapuri students. This scale consists of 50 positive and negative items with an instruction on the front page of the scale. The responses are to be given on the scale form. No time limit is specified to complete the

test. However, the test can be administered conveniently in 40 minutes in a classroom situation. The questions are multiple-choice. As such, each item is supplied with five possible answers, i.e., Always, Frequently, Sometimes, Rarely, and Never. The students were asked to tick (√) the most appropriate answer to each question of the five possible answers. A score of 4, 3, 2, 1, and 0, respectively, is given to positive items, and a score of 0, 1, 2, 3, and 4 is given to negative items.

Construction and validation of the tool: The researcher reviewed several pieces of literature available in social support to construct the tool. During the review period, the researcher gained a clear idea and knowledge of constructing the tool.

Identification of the dimensions of the tool: Based on knowledge of the review of existing literature, the researcher identified some major dimensions of social support, but as per the need of the present study, only four dimensions were taken into consideration: (i) instrumental (ii) informational (iii) emotional (iv) appraisal social support (as shown in Figure 3.4)

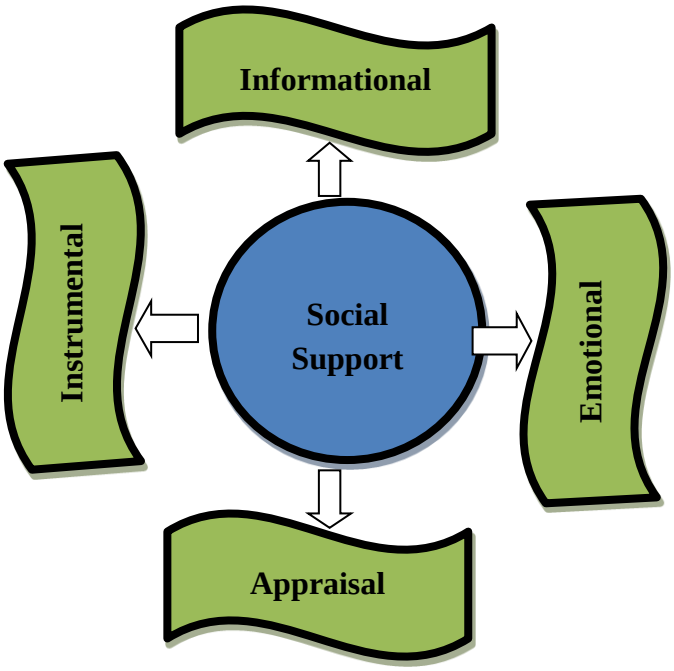

Fig. 3.4. Showing the dimensions of social support

Writing of items: Initially, the researcher constructed 70 items for the first draft of the scale and, with the supervisor's consultation, ensured that no items overlapped and no ambiguity was found.

Expert opinion: As the scale is for the secondary school students for a particular community, the items were checked out by principals of the secondary schools (having M.Ed./ M.A. in Education Degree), and on their recommendations, the researcher kept only 65 items for the scale. Additionally, the tool was sent to several experts from different universities. The experts gave their valuable suggestions and comments for the tool, and the researcher, with the consultation of the supervisor, made necessary changes in the tool accordingly and kept only 56 items for The scale.

Tryout: The social support assessment scale, which consists of 56 items, was tried out on a sample of 100 Surjapuri students studying in class X^{th} in government secondary schools of Kishanaganj district.

Item analysis: An essential first step in standardizing a research tool is item analysis. In the present study, 100 Surjapuri students were selected as samples from two schools, and the total data collected were processed for item analysis. After getting the response sheet, the total scores were arranged in ascending order. The group's upper 27% and lower 27% scores were analyzed. Following the criteria suggested by Edwards (1969), the value for all 56 Likert scale items was calculated. The Mean and SDs of high-scoring and low-scoring groups were calculated. Based on these results, the t-ratio for each of the 56 items was calculated to find the significance of the difference between the means of high and low-scoring groups. A 't-value' equal to or greater than 1.75 indicates (Sood, 2011) that the responses of upper and lower groups of students to statements differ significantly, based on significant differences, some of the items of the scale were accepted and rejected, the items having more significant mean difference were selected as the final statements of the scale.

Table- 3.4: Item Analysis of Social Support Assessment Scale

Items	Upper Group		Lower Group		t-value	Remarks
	Mean	SD	Mean	SD		
Q1	3.370	.926	2.296	.992	4.11	Accepted
Q2	3.22	.751	2.74	.859	2.193	Accepted
Q3	3.703	.541	2.444	.751	7.066	Accepted
Q4	3.592	.636	3.000	.733	3.171	Accepted
Q5	3.703	.465	2.814	.786	5.055	Accepted
Q6	3.333	1.000	2.592	.888	2.878	Accepted

Q7	3.370	.629	2.851	.863	2.521	Accepted
Q8	3.370	.791	2.925	.828	2.015	Accepted
Q9	3.259	.525	2.629	.629	3.990	Accepted
Q10	3.629	.564	2.888	.800	3.928	Accepted
Q11	3.481	.700	2.740	.984	3.187	Accepted
Q12	3.481	.700	2.740	.859	3.473	Accepted
Q13	3.444	.640	2.925	.873	2.487	Accepted
Q14	2.963	.939	3.148	.601	-.862	**Rejected**
Q15	3.259	.813	2.592	.843	2.956	Accepted
Q16	3.407	.693	2.777	.974	2.736	Accepted
Q17	3.148	.718	2.555	.933	2.614	Accepted
Q18	3.074	.997	2.370	.883	2.745	Accepted
Q19	3.518	.642	2.814	.833	3.473	Accepted
Q20	3.518	.509	2.629	.883	4.529	Accepted
Q21	3.555	.640	3.074	.675	2.688	Accepted
Q22	3.555	.506	3.000	.832	2.964	Accepted
Q23	3.296	.541	2.814	.833	2.516	Accepted
Q24	3.148	.662	2.740	.764	2.093	Accepted
Q25	2.963	.897	2.777	1.050	.696	**Rejected**
Q26	3.074	.780	2.592	.693	2.395	Accepted
Q27	3.555	.506	2.740	.813	4.420	Accepted
Q28	3.259	.712	2.814	.878	2.042	Accepted
Q29	3.037	.706	2.963	.854	.347	**Rejected**
Q30	3.740	.446	2.963	.706	4.837	Accepted
Q31	3.555	.577	3.074	.780	2.576	Accepted
Q32	3.333	.480	3.296	.608	.248	**Rejected**
Q33	3.518	.700	2.740	.813	3.767	Accepted
Q34	3.740	.525	2.888	.697	5.066	Accepted
Q35	3.111	.847	3.222	.933	-.458	**Rejected**
Q36	3.222	.640	2.518	1.014	3.048	Accepted
Q37	3.481	.579	2.629	.564	5.468	Accepted
Q38	3.407	.572	2.851	.818	2.891	Accepted

Q39	3.222	.423	2.407	.930	4.141	Accepted
Q40	3.555	.640	2.703	.724	4.579	Accepted
Q41	3.333	.554	2.851	.907	2.352	Accepted
Q42	3.296	.775	2.814	.681	2.424	Accepted
Q43	3.481	.642	2.629	.838	4.188	Accepted
Q44	2.925	.916	3.111	.800	-.791	**Rejected**
Q45	3.333	.620	2.888	.891	2.126	Accepted
Q46	3.481	.509	2.444	.751	5.939	Accepted
Q47	3.555	.697	2.851	.718	3.651	Accepted
Q48	3.370	.564	2.963	.807	2.148	Accepted
Q49	3.259	.712	2.814	.833	2.106	Accepted
Q50	3.629	.629	2.518	.642	6.419	Accepted
Q51	3.259	.594	2.740	.944	2.415	Accepted
Q52	3.703	.465	2.814	.681	5.597	Accepted
Q53	3.518	.509	2.740	1.022	3.538	Accepted
Q54	3.592	.500	2.740	.859	4.452	Accepted
Q55	3.407	.747	2.814	.921	2.596	Accepted
Q56	3.555	.577	2.888	.891	3.261	Accepted

Table 3.5: Showing the distribution of items of the Social Support Assessment Scale (Sources, Dimensions, Positive and Negative items)

Sources	**Dimensions**					**Positive Items**	**Negative Items**
	Instrumental	**Informational**	**Emotional**	**Appraisal**	**Total**		
Parents	6	4	5	2	17	14	03
Teachers	6	2	4	5	17	14	03
Friends	7	4	3	2	16	11	05
Total	19	10	12	09	**50**	**39**	**11**

Validity of the tool: The degree to which a test or scale measures what it is designed to assess is referred to as its validity. For the present study, the researcher established both the face validity and content validity of the scale. Content validity refers to all

the items being representative of all the dimensions of the test that are to be measured. The researcher sent the tool to several university experts to establish the validity of the scale. Each item on the scale was evaluated for its clarity, relevance, and appropriateness by the experts to determine its content and face validity. This helped to ensure that the scale appeared to measure what it intended to measure. The experts gave valuable suggestions for the tool; modification was made accordingly after the experts' suggestions, and the tool was finalized.

Reliability of the tool: The degree to which a test or a scale consistently measures the construct that it is designed to measure across different situations, times, and raters is referred to as its reliability. A reliable scale yields consistent and stable findings as it is the prerequisite for any valid measurement. The researcher applied Cronbach's alpha and split-half reliability to ascertain the scale's internal consistency or reliability coefficient. Cronbach's alpha is a statistical measure used to evaluate the internal consistency of a scale by assessing the degree to which its items are interrelated and measures the common underlying construct. Cronbach's alpha is utilized to establish the internal consistency of the scale. The scale is quite consistent and dependable, as reflected by its Cronbach's alpha value of 0.872, which indicates that it is highly consistent and reliable. Secondly, the Social Support Assessment Scale is a reliable tool to collect data on the availability of social support from the Surjapuri students as it has a split-half correlation coefficient of 0.906, showing a high degree of reliability. Hence, the Social Support Assessment Scale is a reliable tool for assessing the social support of the Surjapuri students, as proven by the high Cronbach's alpha and split-half correlation coefficient values.

Norms: Norms have been established to interpret the Social Support Assessment Scale scores. In this study, the researcher utilized Z score norms. For this purpose, the researcher calculated the mean and standard deviation of the social support scores from a sample size of 100 students. The Norms for interpreting the z-score of the level of the Social Support Assessment Scale are presented in Table 3.6.

N=100 M=153.25 S.D. = 11.65

Table 3.6: Z-score Norms for Level of Social Support Assessment Scale

Raw Score	Z-score	Raw Score	Z-score	Raw Score	Z-score
130	-1.99	146	-0.62	162	0.75
131	-1.91	147	-0.54	163	0.84
132	-1.82	148	-0.45	164	0.92
133	-1.74	149	-0.36	165	1.01
134	-1.65	150	-0.28	166	1.09
135	-1.57	151	-0.19	167	1.18
136	-1.48	152	-0.11	168	1.27
137	-1.39	153	-0.02	169	1.35
138	-1.31	154	0.06	170	1.44
139	-1.22	155	0.15	171	1.52
140	-1.14	156	0.24	172	1.61
141	-1.05	157	0.32	173	1.69
142	-0.97	158	0.41	174	1.78
143	-0.88	159	0.49	175	1.87
144	-0.79	160	0.58	176	1.95
145	-0.71	161	0.66	177	2.04

Table 3.7: Norms for Interpretation of Social Support Assessment Scale

Range of Z Scores	Range of Raw Scores	Level of Social Support Assessment Scale
2.01 and above	177 and above	Extremely High
1.26 to 2.00	168-176	High
0.51 to 1.25	158-167	Above Average
-0.50 to 0.50	146-157	Average
-1.25 to -0.51	136-145	Below Average
-2.00 to -1.26	127-135	Low
-2.01 and below	126 and below	Extremely Low

3.7.2. Description of the Deo-Mohan Achievement Motivation (n-Ach) Scale

The researcher employed a standardized Deo-Mohan Achievement Motivation (n-Ach) Scale to assess the achievement motivation of the Surjapuri students. This scale was taken from the Psychological Corporation Agra. The scale consists of 50 items, of which 13 are negative and 37 are positive. The scale is a self-rating and can be administered in a group with five points to rate as Always, Frequently, Sometimes, Rarely, and Never. A numerical weightage from 4 to 0 for the positive items and the reverse of it for the negative items is given. The total score summarizes all the positive and negative item scores. The minimum score obtained can be 0, and the maximum can be 200. A higher score indicates higher achievement motivation within subjects.

Table-3.8: Positive and negative items of the Deo-Mohan Achievement Motivation (n-Ach) Scale

Response	Item-wise serial number	Total
Positive	2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 15, 16, 23, 24, 25, 26, 27, 28, 29, 30, 31, 33, 35, 36, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50	**37**
Negative	1, 12, 13, 14, 17, 18, 19, 20, 21, 22, 32, 34, 37	**13**
	Total	**50**

Reliability of the scale: A test-retest was applied to obtain the scale's reliability coefficient. Taking different sets of samples, the scale was administered on several occasions. The results are given below in Table 3.9.

Table-3.9: Reliability test score of the Deo-Mohan Achievement Motivation (n-Ach) Scale

Sample	N	Interval	r	Level of significance
Mixed group	51	Four weeks	.69	.01
Males	33	5-6 weeks	.67	.01
Females	50	5-6 weeks	.78	.01

These reliability coefficients are sufficiently high, and the scale can be considered reliable. Bending (1964) established a reliability coefficient of .68 for men and .62 for

women for his factor analytic scale of need achievement. Smith (1973) computed a split-half reliability coefficient of .56 for his ten-item quick measure of achievement motivation. Considering these results, the present scale reliability coefficients by the test-retest method for the total group and the separate male and female groups are very satisfactory, and the scale can be taken as quite reliable for use.

Validity of the scale: As far as validity is concerned, in the first instance, the item validity was established by the high-low discrimination method, which was accepted as the validity of the whole measure. The scale was also used to validate the motivation test for projective achievement. The coefficient of correlation between the scale and projective test was observed to be .54, which speaks for the scale's validity and the concurrent nature's validity. Finally, the scale scores were also correlated with scores obtained by administrating the Aberdeen academic Motivation Inventory of Entwistle (1968), yielding a coefficient of correlation of 75 for the mixed sample of .93. This correlation is high enough to establish the validity of the scale, regarding the r of .54 between the scale and the projective test. McClelland (1958) explains that self-descriptive and projective measures usually do not correlate highly. Even Carney (1966) observed that questionnaire measures correlated poorly with McClelland's projective measures. These explanations support the results of the present achievement motivation scale as being sufficiently valid for measuring achievement motivation.

Table 3.10: Showing the z-Score Norms for the

Raw Score	z-Score	Raw Score	z-Score	Raw Score	z-Score	Raw Score	z-Score
101	-2.44	126	-1.20	151	+0.03	176	+1.26
102	-2.39	127	-1.15	152	+0.08	177	+1.31
103	-2.34	128	-1.10	153	+0.12	178	+1.36
104	-2.29	129	-1.05	154	+0.17	179	+1.41
105	-2.24	130	-1.00	155	+0.22	180	+1.45
106	-2.19	131	-0.95	156	+0.27	181	+1.51
107	-2.14	132	-0.90	157	+0.32	182	+1.56
108	-2.09	133	-0.85	158	+0.37	183	+1.61
109	-2.04	134	-0.81	159	+0.42	184	+1.66

110	-1.99	135	-0.76	160	+0.47	185	+1.71
111	-1.94	136	-0.71	161	+0.52	186	+1.76
112	-1.89	137	-0.66	162	+0.57	187	+1.81
113	-1.84	138	-0.61	163	+0.62	188	+1.86
114	-1.79	139	-0.56	164	+0.67	189	+1.91
115	-1.75	140	-0.51	165	+0.72	190	+1.95
116	-1.70	141	-0.46	166	+0.77	191	+2.00
117	-1.65	142	-0.41	167	+0.82	192	+2.05
118	-1.60	143	-0.36	168	+0.87	193	+2.10
119	-1.55	144	-0.31	169	+0.92	194	+2.15
120	-1.50	145	-0.26	170	+0.97	195	+2.20
121	-1.45	146	-0.21	171	+1.01	196	+2.25
122	-1.40	147	-0.16	172	+1.06	197	+2.30
123	-1.35	148	-0.11	173	+1.11	198	+2.35
124	-1.30	149	-0.06	174	+1.16	199	+2.40
125	-1.25	150	-0.01	175	+1.21	200	+2.45

3.7.3. Academic achievement scores

No standardized tool was used to collect data relating to the academic achievement of the Surjapuri students; their X^{th} class board marks were considered the scores for the study, which were collected from the respective schools. The researcher used students' class X^{th} board exam results to know students' academic achievement scores. There are six papers, i.e., Mathematics, Science, Social Science, one paper from these language papers as a mother tongue (Hindi, Bengali, Urdu, and Maithili), one paper to be chosen by the candidate out of these language papers as a second Indian language (Urdu, Sanskrit, Maithili, Bengali, Arabic, Persian, Bhojpuri) and English (optional). A list of subjects and marks distribution Tableven in table 3.11. The total mark of the Board Exam is 500, where students can score from 0 to 500. This means a participant can score a minimum of 0 and a maximum of 500 on the exam. The Board has divided the scores into four categories, i.e., high, average, low, and below low scores in the form of first, second, third, and fail divisions, as shown in Table 3.12.

Table 3.11: Showing the Subjects of the 10th class and subject-wise marks distribution of BSEB, Patna

Category of Subjects	Name of Subjects	Practical Marks	Theory Marks	Full Marks
Mother Tongue (MT)	Hindi, Bengali, Urdu and Maithili	-	100	100
Second Indian Language (SIL)	For Hindi Speaking Students-One language to be chosen amongst Sanskrit, Arabic, Persian For Non Hindi speaking Students-Hindi	-	100	
Compulsory Subjects	Mathematics	-	100	100
	Home Science (In place of Mathematics for Blind Students)	30	70	100
	Science	20	80	100
	Social Science	20	80	100
	English (Not compulsory to pass, and marks secured are not added to the total)	-	100	100
Elective Subjects (Not compulsory to pass and marks secured not added in total)	Higher Mathematics, Commerce, Economics, Persian, Arabic, Sanskrit and Maithili	-	100	100
	Fine Art, Home Science, Dance, and Mmusic	30	70	100
Vocational	Security, Beautician,	-	100	100

Elective Subjects (It is not compulsory to pass, and marks secured are not added to the grand total)	Tourism, Retail Management, Automobile, Electronics and Hardware, Beauty and Wellness, Telecom and ITI			

Table 3.12: Distribution of division/grades by the total marks scored

Division	Range of raw scores
High (First Division)	300 marks and above
Average (Second Division)	Between 225 marks and 299 marks
Low (Third Division)	Between 150 marks and 224 marks
Below Low	149 and below marks

3.8.0. Data collection procedure

After getting the necessary approvals from the administrators in advance, the researcher visited the selected schools to gather data from Surjapuri secondary school students. Before administering the questionnaire, the researcher interacted with the students to establish a rapport and create a comforting atmosphere for them. The respondents were given instructions on filling out the questionnaire, after which they were assured of confidentiality and the purpose of the research. Also, the class X^{th} board examination results were obtained from the appropriate authorities. The researcher scored the questionnaires according to the established scoring pattern and systematically arranged and tabulated the data for further analysis.

3.9.0. Process of the analysis of data

A quantitative approach to data analysis has been used in the present study.

Descriptive Statistics: Percentages and frequencies have been utilized to summarize and describe the level of academic achievement, social support, and achievement motivation among Surjapuri students.

Diagrammatic representation: To better understand the analysis, visual tools such as bar charts, pie charts, or histograms represent data.

Inferential statistics: An independent t-test was used to determine if there were significant differences between the means of the two groups. In the present study, it has been applied to see if students' academic achievement, social support, and achievement motivation differ based on area of residence (Rural and Urban), gender (Male and Female), and socio-economic status (APL and BPL)

Correlation analysis: The Pearson Coefficient of Correlation is used to determine whether there is a relationship between academic achievement and social support, academic achievement and achievement motivation, and social support and achievement motivation.

3.10.0. Ethical approval

It is necessary to maintain ethical standards to ensure the rights of the research participants and secure the research's integrity. Adhering to ethical norms, the researcher obtained permission from the Departmental Research Committee to conduct the study. Then, prior approval of schools to collect data from the students, informed consent explaining the purpose of the study, procedures, potential risks, and benefits along with assurances of confidentiality were provided to the participants before administrating the research tools. Participants were informed that their participation was entirely voluntary and that they had the right to withdraw from the study at any stage without any consequences. The researcher made a firm commitment to the participants that the data collected would be used only for his research work, thereby ensuring the privacy and security of the data. The participant's identities were anonymized by assigning pseudonyms to their responses, ensuring that no personal information was linked to the data, and upholding privacy and confidentiality guidelines (Marshall and Rossman, 2011). The researcher ensured that the data were well-managed and well-organized to avoid any errors that could affect the precision of the results.