



Measuring Selected Variables of the Rural Population of Bardoli Taluka of Surat District in the State of Gujarat

Principal Author

DR. RAJESH R. DESAI

Assistant Professor

Ambaba Commerce College, MIBM & DICA- Sabargam

Affiliated to Veer Narmad South Gujarat University, Surat

Co-Author

DR. Pratik K. Pastagiya

Adhyapak Sahayak

SPB ENGLISH MEDIUM COLLEGE OF COMMERCE, SURAT

Affiliated to Veer Narmad South Gujarat University, Surat

Abstract: The objective of socio economic is duly completed with the symmetrical approach of theoretical and practical outcomes. In this regard, a socio-economic survey conducted in the villages of Bardoli Taluka. During the survey, the surveyors reported various issues related to the crops taken in a year, respondents having size of land, annual Income of respondents, whether respondents living in joint family and nuclear family. To know the number of crops taken in a year and respondents having size of land, to know the annual Income of respondents by joint family and nuclear family, and to know that whether respondents living in joint family and nuclear family. Result found that the difference in crops taken in a year by having size of land and there is difference in annual Income by joint Family and nuclear family.

Keywords - Crops taken in a year, size of land, Annual Income, Kind of family

1. Introduction

In Present time India is fastest growing economy around the world. Rural socio-economic development is crucial for inclusive growth in India. In India, Gujarat is one of the developed States. We can divide Gujarat in three parts namely North Gujarat, Mid Gujarat and South Gujarat. For the study purpose, we consider the South Gujarat. In South Gujarat, there are many Districts like Surat, Bharuch, Navsari, Tapi, Valsad, Dang and Narmada etc. Surat District is developing much faster as compared to other District. Most of the researcher in the past focused on Surat city areas for the study purpose, but a smaller number of researchers focused on rural area for basic facilities only. No any researcher focused on investment pattern, survive and daily routine life of villager, problem faced by the local farmer etc. therefore, these factors have attracted the attention of planners, academicians and decision makers.

Therefore, in present study, village population of Bardoli Taluka is considered for study purpose and mainly focus on the Social and economic condition of village population of Bardoli Taluka.

2. Review of Literature

S. Sochipem Zimik (2023) investigated the socio-economic status of the people of Manipur. The study analysed socio-economic transformation with an analytical assessment of data and information obtained from various departmental functions, spanning the pre-British, British and present periods. The study highlights the economic status of the region and identifies potential areas for economic growth and development. The study focused on filling unemployed ST vacant posts through training and development and making youth competent. The studies suggest that the public and private sectors must implement more efficient strategies and economic models to improve socio-economic conditions.

Debajyoti Dutta Saikia et. al (2022) investigated the socio-economic status of the rural population of Assam in terms of income level. The study found that 26.66% of the total sample household's monthly income was below Rs.10,000 and 33.34% was above Rs. 20,000. The people in the lower income group were engaged in agriculture fields, the unorganized service sector and daily labour. Therefore, they were not getting primary facilities compared with the high-income groups. The study concluded that overall socio-economic status of the population in the village is relatively good.

Gisala Georga et. al (2022) study on an overview of the socio-economic living conditions of widows. As per the study, we know that the present's number of widows is 42.2 million in India, 5.6 million in Brazil, 4.7 million in Vietnam and 1.2 million in Indonesia. The study indicated that the position of a widow in society is a crucial topic. Thus, several factors are responsible for the deprived position of widows and there is no uniform pattern of widowhood, either in terms of the conditions leading to such a phenomenon or in terms of the consequences.

3. Objectives of the study

1. To know the number of Crops taken in a year and respondents having size of land.
2. To know the Annual Income of respondents by Joint Family and Nuclear Family
3. To know that whether respondents living in Joint Family and Nuclear Family

4. Methodology

Primary as well as secondary data have used for study purpose. For primary data collection, structured questionnaire have used and the secondary data have collected from various sources like some government web site, magazine, newspaper and articles. For this research maximum data collected through the structured questionnaire and personal interview. Quantitative approaches have used. The present study uses descriptive research design. In quantitative approach, population of village selected from each part of Bardoli Taluka by simple random sampling method to fill up the questionnaire. The contact method was personal. Beneficiary's survey conducted through self-administered structured questionnaire. 200 respondents have contacted personally.

5. Tools for Statistical Analysis

The following tools used for data analytical purpose;

1. Normality test
2. Kruskal-Wallis test
3. Mann Whitney test

6. Result & Discussion

The results bifurcated in to two parts normality testing of data as well as hypothesis testing of data.

A) Normality Testing

6.1. Kind of family you are having

Case Processing Summary						
	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Kind of family	200	100.0%	0	0.0%	200	100.0%

The case processing summary table shows the number of cases analyzed, number of missing values and total number of cases. There are no missing values in this case.

Descriptives				
			Statistic	Std. Error
Kind of family	Mean		1.10	.021
	95% Confidence Interval for Mean	Lower Bound	1.06	
		Upper Bound	1.14	
	5% Trimmed Mean		1.06	
	Median		1.00	
	Variance		.090	
	Std. Deviation		.301	
	Minimum		1	
	Maximum		2	
	Range		1	
	Interquartile Range		0	
	Skewness		2.687	.172
	Kurtosis		5.272	.342

The descriptive table gives the information about various summary measures like mean, median, variance, standard deviation, minimum, maximum, range, interquartile range, skewness and kurtosis. This table contains a statistic called 5% Trimmed Mean. This is useful when there are outliers in the sample. You should note mean is not an appropriate measure of central tendency when there are outliers in the sample. Median is more appropriate measure of central tendency in such situation. However, if we want to use mean in such a situation, it is advisable to remove outliers before calculating the mean. Five percent Trimmed Mean excludes top 5% as well as bottom 5% observations before calculating the mean. The mean calculated by excluding these observations is likely to be more close to the population mean.

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
Kind of Family	.530	200	.000	.342	200	.000
a. Lilliefors Significance Correction						

The test of normality table presents two statistics: Kolmogorov-Smirnov and Shapiro-Wilk. Sample size is more than 200; we should use Kolmogorov-Smirnov statistics to examine normality. The null and alternative hypothesis for Kolmogorov-Smirnov test are:

H_0 : The sampling distribution is normal.

H_1 : The sampling distribution is not normal.

If the sample significance level is less than 0.05, null hypothesis rejected and sampling distribution is not normal. As the significance level of Kolmogorov-Smirnov test is less than 0.05, we can interpret that the distribution for kind of family you are having is not normal.

6.2. Size of land

Descriptives				
			Statistic	Std. Error
Size of Land	Mean		2.80	.406
	95% Confidence Interval for Mean	Lower Bound	1.99	
		Upper Bound	3.60	
	5% Trimmed Mean		1.97	
	Median		1.00	
	Variance		32.935	
	Std. Deviation		5.739	
	Minimum		0	
	Maximum		50	
	Range		50	
	Interquartile Range		3	
	Skewness		5.933	.172
	Kurtosis		45.001	.342

The descriptive table gives the information about various summary measures like mean, median, variance, standard deviation, minimum, maximum, range, interquartile range, skewness and kurtosis. This table contains a statistic called 5% Trimmed Mean. This is useful when there are outliers in the sample. You should note mean is not an appropriate measure of central tendency when there are outliers in the sample. Median is more appropriate measure of central tendency in such situation. However, if we want to use mean in such a situation, it is advisable to remove outliers before calculating the mean. Five percent Trimmed Mean excludes top 5% as well as bottom 5% observations before calculating the mean. The mean calculated by excluding these observations is likely to be more close to the population mean.

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	Df	Sig.
Size of Land	.313	200	.000	.452	200	.000
a. Lilliefors Significance Correction						

The test of normality table presents two statistics: Kolmogorov-Smirnov and Shapiro-Wilk. Sample size is more than 200; we should use Kolmogorov-Smirnov statistics to examine normality. The null and alternative hypothesis for Kolmogorov-Smirnov test are:

H_0 : The sampling distribution is normal.

H_1 : The sampling distribution is not normal.

If the sample significance level is less than 0.05, null hypothesis rejected and sampling distribution is not normal. As the significance level of Kolmogorov-Smirnov test is less than 0.05, we can interpret that the distribution for size of land you are having is not normal.

6.3. Number of crops taken in a year

Case Processing Summary						
	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Number of crops are taken in a year	200	100.0%	0	0.0%	200	100.0%

The case processing summary table shows the number of cases analyzed, number of missing values and total number of cases. There are no missing values in this case.

Descriptives				Statistic	Std. Error
Number of crops are taken in a year	Mean			.90	.061
	95% Confidence Interval for Mean				
	Lower Bound			.78	
	Upper Bound			1.02	
	5% Trimmed Mean			.87	
	Median			1.00	
	Variance			.754	
	Std. Deviation			.868	
	Minimum			0	
	Maximum			3	
	Range			3	
	Interquartile Range			2	
	Skewness			.382	.172
	Kurtosis			-1.126	.342

The descriptive table gives the information about various summary measures like mean, median, variance, standard deviation, minimum, maximum, range, interquartile range, skewness and kurtosis. This table contains a statistic called 5% Trimmed Mean. This is useful when there are outliers in the sample. You should note mean is not an appropriate measure of central tendency when there are outliers in the sample. Median is more appropriate measure of central tendency in such situation. However, if we want to use mean in such a situation, it is advisable to remove outliers before calculating the mean. Five percent Trimmed Mean excludes top 5% as well as bottom 5% observations before calculating the mean. The mean calculated by excluding these observations is likely to be more close to the population mean.

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	Df	Sig.
Number of crops are taken in a year	.260	200	.000	.810	200	.000

a. Lilliefors Significance Correction

The test of normality table presents two statistics: Kolmogorov-Smirnov and Shapiro-Wilk. Sample size is more than 200; we should use Kolmogorov-Smirnov statistics to examine normality. The null and alternative hypothesis for Kolmogorov-Smirnov test are:

H_0 : The sampling distribution is normal.

H_1 : The sampling distribution is not normal.

If the sample significance level is less than 0.05, null hypothesis rejected and sampling distribution is not normal. As the significance level of Kolmogorov-Smirnov test is less than 0.05, we can interpret that the number of crops taken in a year is not normal.

6.4. Annual Income

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Income	200	100.0%	0	0.0%	200	100.0%

The case processing summary table shows the number of cases analyzed, number of missing values and total number of cases. There are no missing values in this case.

Descriptives

		Statistic	Std. Error
Income	Mean	189665.00	7573.739
	95% Confidence Interval for Mean	174729.92	
	Lower Bound	204600.08	
	Upper Bound		
	5% Trimmed Mean	185738.89	
	Median	200000.00	
	Variance	11472304296.4	
		82	
	Std. Deviation	107108.843	
	Minimum	50000	
	Maximum	400000	
	Range	350000	
	Interquartile Range	185000	
	Skewness	.201	.172
	Kurtosis	-1.052	.342

The descriptive table gives the information about various summary measures like mean, median, variance, standard deviation, minimum, maximum, range, interquartile range, skewness and kurtosis. This table contains a statistic called 5% Trimmed Mean. This is useful when there are outliers in the sample. You should note mean is not an

appropriate measure of central tendency when there are outliers in the sample. Median is more appropriate measure of central tendency in this situation. However, if we want to use mean in such a situation, it is advisable to remove outliers before calculating the mean. Five percent Trimmed Mean excludes top 5% as well as bottom 5% observations before calculating the mean. The mean calculated by excluding these observations is likely to be more close to the population mean.

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Income	.154	200	.000	.920	200	.000

a. Lilliefors Significance Correction

The test of normality table presents two statistics: Kolmogorov-Smirnov and Shapiro-Wilk. Sample size is more than 200; we should use Kolmogorov-Smirnov statistics to examine normality. The null and alternative hypothesis for Kolmogorov-Smirnov test are:

H_0 : The sampling distribution is normal.

H_1 : The sampling distribution is not normal.

If the sample significance level is less than 0.05, null hypothesis rejected and sampling distribution is not normal. As the significance level of Kolmogorov-Smirnov test is less than 0.05, we can interpret that the Annual income is not normal.

B) Hypothesis Testing

6.5. Kruskal-Wallis Test

H_0 : There is no difference in Crops are taken in a year by having size of land

H_1 : There is difference in Crops are taken in a year by having size of land

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum	Percentiles		
						25th	50th (Median)	75th
Size of Land	200	2.80	5.739	0	50	.00	1.00	3.00
Number of crops taken in a year	198	.89	.875	0	3	.00	1.00	2.00

The descriptive statistics table gives count (N), mean, standard deviation, maximum, minimum and details about the quartiles.

Ranks

	Number of crops taken by in a year	N	Mean Rank
Size of Land	None	83	42.00
	One	57	139.23
	Two	54	144.76
	Three	4	115.50
	Total	198	

The ranks table displays the details about the mean ranks for each category of size of land you are having i.e. for None, One, Two, And Three. The mean ranks of two crops are taken in a year is highest (144.76), followed by One crops are taken in a year is (139.23), Three crops are taken in a year is (115.50) and that of none crops are taken in a year is (42.00) is lowest.

Test Statistics^{a,b}

	Size of Land
Chi-Square	157.847
Df	3
Asymp. Sig.	.000

a. Kruskal Wallis Test

b. Grouping Variable: Number of crops taken by in a year

The table test statistics gives information about whether the difference is statistically significant or by chance. The Chi-square statistic is 157.847 and the associated significance is 0.000, which is less than 0.05. The null hypothesis failed to accept and we may say that the difference in crops taken in a year by having size of land. In simple terms, there is significant difference in crops taken in a year belonging to size of land.

6.6. Mann-Whitney Test

H₀: There is no difference in Annual Income by Joint Family and Nuclear Family

H₁: There is difference in Annual Income by Joint Family and Nuclear Family

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum	Percentiles		
						25th	50th (Median)	75th
Income	200	189665.00	107108.843	50000	400000	75000.00	200000.00	260000.00
Kind of family	200	1.10	.301	1	2	1.00	1.00	1.00

The descriptive statistics table gives count (N), mean, standard deviation, maximum, minimum and details about the quartiles.

Ranks

	Kind of family	N	Mean Rank	Sum of Ranks
Income	Joint Family	180	97.04	17466.50
	Nuclear Family	20	131.68	2633.50
	Total	200		

The Ranks table displays the details about the mean ranks and sums of ranks for each category of kind of family i.e. for Joint Family and Nuclear Family. The sum of ranks of Joint Family is higher than the sum of ranks of Nuclear Family.

Test Statistics^a

	Income
Mann-Whitney U	1176.500
Wilcoxon W	17466.500
Z	-2.545

a. Grouping Variable: Kind of family

The table test statistics gives information about whether the statistically significant or by chance. The Mann-Whitney U test is 1176.500 and the associated significance is 0.011. However, for large samples, we must check the Z-value. The Z-value -2.545 and the associated significance is 0.011, which is less than 0.05. The null hypothesis is thus, failed to accept and we may say that there is difference in Annual Income by Joint Family and Nuclear Family.

References:

1. https://en.wikipedia.org/wiki/Bardoli_Satyagraha#:~:text=The%20Bardoli%20Satyagraha%2C%20was%20a,began%20on%2012%20June%201928
2. https://en.wikipedia.org/wiki/Socioeconomic_status
3. <https://largescaleassessmentsineducation.springeropen.com/articles/10.1186/s40536-020-00086-x>
4. https://nces.ed.gov/nationsreportcard/pdf/researchcenter/socioeconomic_factors.pdf
5. Zimik, A. S. (2023). Assessment on the Socio-Economic Status of Manipur: A Study base on Economic Perspectives. World Academic Journal of Management, 1-9. Retivered from https://www.ilo.org/wcmsp5/groups/public/@ed_emp/@emp_policy/@invest/documents/projectdocumentati on/wcms_asist_8305.pdf
6. Saikia, D. D., Uttam Khanikor, U., & Dutta, A. (2022) SOCIO ECONOMIC STATUS OF RURAL ASSAM: AN INCOME LEVEL ANALYSIS. International Journal of Mechanical Engineering, 203-208. Retivered from https://kalaharijournals.com/resources/SP%20Jan_Feb_25.pdf
7. Georga, G., & Menon, S. (2022). An Overview of Socio-economic Living Conditions of Widows. Journal of Emerging Technologies and Innovative Research, 422-431. Retivered from <https://www.jetir.org/papers/JETIR2208449.pdf>