

Assessment of Altitudinal Variation and Prioritization of Life Quality Indicators in Ethnic Population (*Gujjars*) of North Kashmir Himalayas

Sameer Fayaz^{1*}, G. M. Rather², M. Imran Malik³ and M. Sultan Bhat²

¹Department of Geography, Cluster University, Srinagar

²Department of Geography and Regional Development, University of Kashmir, Srinagar 190006

^{**}Department of Geography, Govt. Degree College Sogam

*Corresponding Author Email: bhatsameer3384@gmail.com

ABSTRACT

Quality of life (QoL) is determined by the number of opportunities offered to the citizens and their freedom to choose from these opportunities. It is a function of living conditions and is affected by geographical, ecological and socio-cultural factors. The study aims to examine the QoL among Gujjars of North Kashmir Himalayas which extends from Zojila to Kazinag. Gujjars are semi-nomadic, natives and ethnic community of Jammu & Kashmir state. The study area was divided into five altitudinal zones (A to E-) with an interval of 200 meters. A total of sixteen variables determining the QoL were analyzed by stratified random sampling of eight percent of the total households in the study area (2016-2019). Composite index and standard deviation of life quality indicators was used for determining the QoL. The results reveal that the quality of life decreases with increasing altitude. Four levels of QoL (poor - excellent) were identified with zone A (1600-1800 mts) having good QoL, zone B(1800-2000 mts) and zone C(2000-2200 mts) having medium QoL, zone D(2200-2400 mts) having very poor QoL and zone E(2400 mts & above) having poor QoL.

Keywords: North Kashmir, Quality of life, Altitude; Stratified Random Sampling, Composite index

1.1 Quality of Life

QoL is one of the fundamental aspects of economic development as it supports sustainable development and standard of living and better education (Rahmanet *al.*, 2020, Javed, Salma *et al.*, 2016). Quality of life (QoL) studies form part of human geography, radical geography and welfare geography. Social problems, disparities, wellbeing and QoL are the new domains of geographical enquiry (Jha and Tripathi, 2014). The development of any geographical area is best reflected in the QoL of its people. In the broadest sense, QoL is a function of living conditions. It is a multidimensional concept and is a composite measure of physical, mental and social wellbeing as perceived by each individual or by a group of individuals (Nagpal and Sell, 1985; Krishnakumar, 2001). It is defined as something that makes life better and is concerned with people's welfare (Discoli, 2006). QoL includes non-materialistic aspects of life such as health, social relations and the quality of natural environment. Furthermore, this concept encompasses not only the objective conditions of life but also the

subjective QoL such as individual perceptions and evaluations of life conditions (Smith, 1977). It covers not only the economic opportunities available to the people, but also their ability to take advantage of these opportunities and the existence of living conditions which permit a healthy and productive life (Kumar and Abay, 2007).

QoL is determined by the various opportunities open to individuals and their freedom to choose from these opportunities (Sen, 1982). It encompasses physical, economic, social, cultural, spiritual and political improvements of a community. Apart from the distribution of infrastructural facilities, the QoL depends upon several factors like geographical, ecological, social, cultural etc., which are distributed in a haphazard manner and thus handicaps the development (Torbjorn, 1983, WHO, 1990, Dasgupta and Weale, 1992, Felce and Perry, 1995, UNDP, 2010, Olajuyigbe, 2013; Streimikiene, 2015).

Considering the need to study QoL at micro level, indicator approach is feasible. An indicator is a token or symptom of some

condition. The study focuses on the QoL among ethnic community of north Kashmir Himalayas. Gujjars are native and ethnic group settled at higher altitudes of north Kashmir Himalayas and are socially and economically excluded (Hussain, 1987). Sanitation in the rural areas offers a formidable challenge to the health and well being of the rural population and the most challenging factor in the rural sanitation is the habit of open area defecation by the rural population. Also there is problem of housing quality. Housing is a problem in both urban and rural areas of Kashmir valley. So it becomes necessary to analyze the levels of QoL among Gujjars of north Kashmir Himalayas which is the main objective of the study. Gujjars of Kashmir valley are sedentary in nature, settled in foothills and higher reaches of mountains. Transhumance is found in Bakarwals because they have to feed their livestock which is not possible in winters as pastures are covered with snow.

Sahay (2006) used composite index technique to assess the levels of quality of life. About thirteen parameters were selected. Every variable was powered as X^1 , X^2 . Weights was assigned to every sub-indicator. Standard deviation was used for determining the levels of quality of life by the help of composite index.

There are various methods by which we quality of life is calculated. Among the most used methods are composite scores by using selected variables like economic, health, family and relationship (Kumar and Abay, 2007, Jha and Tripathi, 2014, Bracy, 1952, Singh and Singh, 1979) and standard deviation techniques, by integrating subjective and objective indicators quality of life model will be proposed. NFHS inequality surveys, inter-regional disparities also show differences in quality of life (Felce & Perry, 1995, Smith, et

al., 2007, Puskorius, 2015, Kohli and Jain, 1999).

Subjective indicators plays an important role in depicting quality of life as it shows satisfaction levels in housing, education, occupation, amenities etc. The above study takes only objective indicators in consideration. The main advancement in our study is that it takes both subjective and objective indicators in consideration.

Subjective indicators plays an important role in depicting quality of life as it shows satisfaction levels in housing, education, occupation, amenities etc. The above study takes only objective indicators in consideration. The main advancement in our study is that it takes both subjective and objective indicators in consideration.

1.2 Study Area

North Kashmir Himalayas (**Fig.1**) is a part of Great Kashmir Himalayas which lies between $34^{\circ}16'$ - $34^{\circ}40'$ North Latitude and $73^{\circ}45'$ - $75^{\circ}35'$ East Longitude. The mountainous range has an average altitude of 2324 meters and stretches over an area of 3934.5 Km². North Kashmir Himalayas take a blend towards the southwest near Zojila to Kazinag. North Kashmir Range acts as a water divide between Jhelum in Kashmir valley and Kishanganga of Gurez valley (Raza *et al.*, 1978). The total Gujjar villages in North Kashmir Himalayas are 113. The total population of North Kashmir is 2568071 persons and the total Gujjar population is 244501 persons (Census, 2011). The average total literacy of all altitudinal zones was found to be 41.5 percent which is much below than state average (68.74 percent) and national average (74.04 percent). About 66.5 percent households have income of Rs. 6000 per month. About 73 percent of population was involved in primary activities (Labour and Agriculture).

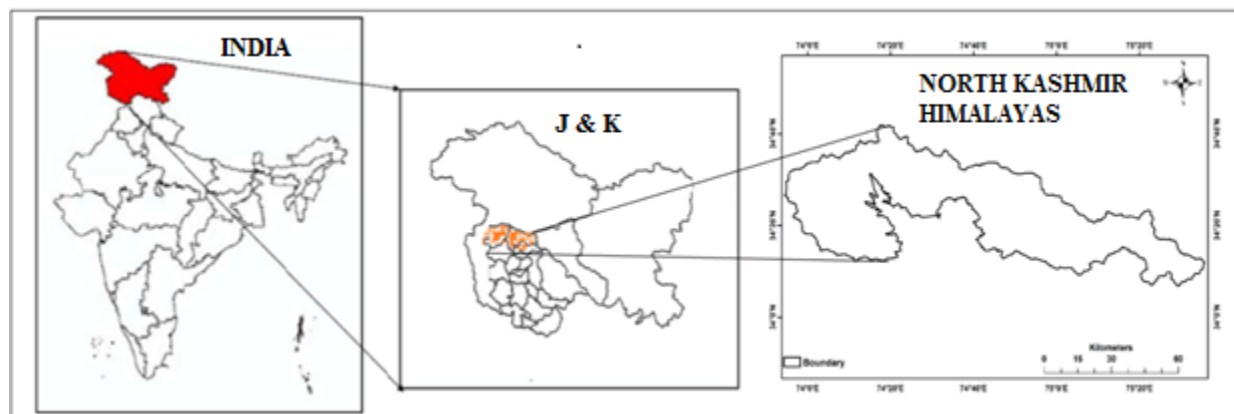


Fig 1. Location map of the study area

1.3 Data Base and Methodology

The study is based on both primary and secondary data sources. The data related to selected parameters like housing, income, education, fuel wood used for cooking, duration of electricity and satisfaction level was generated by schedule method using stratified random sampling. A sample size of 20 percent of the total *Gujjar* villages and 8 percent of the households was selected for the sample survey. The *Gujjar* villages having

population of 200 persons were not taken into consideration as most of the villages have mixed population of Kashmiri and *Gujjars*. The sample households were selected from different altitude zones based on the concentration of *Gujjar* villages in different altitude zones (Table 1). Therefore a Household survey of 557 sample households was carried out to study the residential environment and QoL in north Kashmir Himalayas.

Table 1. Sample frame of the study

Altitude Zone (meters)	Sample Village Name	Total Households	Total Population (Persons)	District	Sample household Size
Zone A (1600-1800)	GundSaderkoot	34	229	Bandipora	3
	Aloosa	632	4115	Bandipora	51
	AhmiSharief	69	449	Bandipora	6
	Chiti Bandi	808	5260	Bandipora	65
Total		1543	10053		125
Zone B (1800-2000)	Muqam	254	1833	Bandipora	20
	Malangam	607	4377	Bandipora	49
	Kalrooch	120	863	Kupwara	10
	Manigam	618	4458	Ganderbal	49
	Shiltra	51	366	Kupwara	4
	Kuligam	34	269	Kupwara	3
	Sumlar	313	2505	Bandipora	25
	Akhal	136	1091	Ganderbal	11
	Hayan	158	1260	Ganderbal	13
Total		2291	17022		184
Zone C (2000- 2200)	ChuntWaliwar	357	2678	Ganderbal	29
	Khurhama	314	2357	Kupwara	25
	Chuntmullah	209	1573	Ganderbal	17

	Wangat	630	4342	Ganderbal	50
	Chatargul	473	3258	Ganderbal	38
Total		1983	14208		159
Zone D (2200-2400)	Farkhan	86	613	Kupwara	7
	Dardpora	231	1641	Bandipora	18
	Kolan	104	842	Ganderbal	8
Total		421	3096		33
Zone E (2400 & above)	Gangangeer	153	1303	Ganderbal	12
	Ganiwan	550	5078	Ganderbal	44
Total		703	6381		56
Grand Total		6941	50760		557.0

Source: Census of India (2011)

For the determination of the QoL among Gujjars, composite index and standard deviation techniques have been used. To calculate the composite index, 16 variables were selected to determine QoL. Both subjective and objective indicators were taken into consideration. Statistically, each variable was powered with X^1 , X^2 etc. Reasonable weights were assigned to each variable. Composite scores of all the variables were taken and standard deviation values were calculated. The QoL under deviation was grouped and finally comparative analysis was done to analyze QoL in different altitude zones.

The standard deviation is calculated using the "n-1" method. S.D uses the following formula:

$$S.D = \sqrt{\frac{\sum (x - \bar{x})^2}{(n - 1)}}$$

Where x is the sample mean average (number1, number2...) and n is the sample size.

1.4 Results and Discussion

In the present study altogether sixteen variables have been carefully chosen to determine the existing QoL in Gujjar population of North Kashmir Himalayas. These indicators are discussed as under:

i. Housing structure (X1)

The type of house primarily depends upon the geographical environment and the socio-economic structure of the people. Housing structure and quality of materials used is one of the important parameters for estimating QoL (Sahay, 2006). The important housing types in the study area are *kothas* (single storied mud house with steeper roof tops), semi-pucca houses and pucca houses. The highest percentage of *kothas* was found in zone D (9.1 Percent). However, a complete absence of *kothas* was observed in zone A. The highest percentage of semi-pucca houses are found in zone E (21.4 Percent) and lowest percentage was found in zone A (20 Percent). Pucca structures were mostly found in zone A (21.6 Percent) followed by zone B (18.5 percent). It is therefore evident that the house type varies with altitude. In fact, the quality of houses decreases with the altitude. The more comfortable and stable house types are located in zone A.

ii. Satisfaction with housing (X2)

Satisfaction with housing structure is one of the subjective parameters for the assessment of QoL. About 16percentof the sample households were satisfied with housing in zone A while in zone D most of the respondents (93.9percent) were not satisfied (Jha and Tripathi, 2014, Anuradha, 2006).

iii. Age of building (X3)

The age of building determines the QoL. Greater the age of a building, lesser will be its quality. About 51.5 percent buildings in zone D has above 40 years of age. In zone A, about 18.4 percent of the buildings have below 10 years of age while only 10.4 percent of the buildings are more than 40 years old.

iv. Ventilation (X4)

Ventilation plays an important role for better housing conditions and therefore is an important parameter for assessing QoL. From the study it was found that 38 percent of the total households have proper ventilation while about 60 percent households have improper ventilation in all altitude zones.

v. Levels of Education (X5)

Literacy is a significant indicator of socio-economic development and QoL. The study area is an educationally backward area. The low socio-economic status and lack of political will have been the main reason of low literacy (Sundari, 2003). The altitude zone D has highest level of primary education (20.5percent). The altitude zone C has highest percentage of secondary education (16.3 percent) while as zone D has lowest percentage of secondary education (8.5 percent). Regarding the higher education, zone A has highest percentage (6.3 percent) and zone D has lowest percentage (1.7 percent).

vi. Satisfaction with education system (X6)

The development of educational facilities greatly vary with the altitude as zone D, zone E, Zone C and Zone B is highly dissatisfied with educational system (87.9percent, 87.1percent, 86.8 percent and 81.5percent) while about 31.2 percent in zone A are satisfied with the educational facilities.

vii. Levels of income (X7)

Income determines the state of wellbeing of the people to a larger extent. Household income is an important parameter to ascertain the standard of living and state of well being of the inhabitants. The distribution of monthly income is a useful device in making provision

for housing. The main objective of the income distribution has been to examine income inequalities among households of different altitude zones. Most of the altitude zones have an average income of rupees 6000per month. The maximum concentration of households with the highest income category of above rupees 10000 is found in zone A (20.8 percent) followed by zone E (16.1 Percent) and zone D (15.2 Percent).

viii. Satisfaction with income (X8)

It is very difficult for a human being to be a satisfier than a maximizer. The absolute amount of income and its seasonal distribution pattern has resulted most of the people (about 90 percent) to be dissatisfied with their income levels with maximum dissatisfaction found in Zone D (93.5 percent).

ix. Occupation (X9)

The type of occupation determines the QoL with secondary and tertiary activities contributing to quality improvements in human resource (Govindaraju, 2012). Primary economic activities are dominating in all the altitude zones. However, about 50 percent of the households are engaged with secondary and tertiary activities in altitude zone E.

x. Satisfaction with occupation (X10)

The level of satisfaction with one's occupation varies with the altitude. The higher the altitude, the lower the satisfaction with occupation is observed in the study area. About 29.6 percent households in zone A are satisfied with occupation. In zone D about 84.5 percent are not satisfied with their occupation.

xi. Family possession (X11)

The lower the altitude, the higher the number of family possessions is observed in the study area. The family possessions include refrigerator, television, vehicles, electronic appliances etc. The lowest percentage of family possessions in terms of television (6 percent) and vehicles (6.1 percent) were found in zone D. while the highest percentage of family possessions in terms of television (20.8

percent) and vehicles (9.6 percent) were found in zone A.

xii. Satisfaction with family possessions (X12)

The inhabitants of Zone A (25.6 Percent) are highly satisfied with family possessions while about 87.5 percent households in zone D are not satisfied with family possessions.

xiii. Health status (X13)

They rightly say 'Health is Wealth'. Developing countries are suffering from one or more of the diseases associated with inadequate medical facilities, dreadful housing and sanitation. The inhabitants of lower altitudes are suffering from less number of diseases as compared to the inhabitants of higher elevations. In altitude zone A, about 43.2 percent households have fairly good health condition while in altitude zone D, about 21.2 percent have bad health condition.

xiv. Satisfaction with health system (X14)

The provision of health facilities in lower altitudes is much accessible than in the higher altitudes. Moreover, limited accessibility in higher altitudes aggravates the problem. It takes enough time for a patient from a higher altitude to reach a needed hospital. The highest percentage of satisfaction with the health system was found in lower altitudes (Zone B, 28.8 percent) as compared to the higher altitudes (Zone D 13.8 percent).

xv. Latrine facility(X15)

Modern latrine facility is important for healthy living as it ensures a non-polluted environment. Most of the altitude zones in the study area have pit latrines. The highest percentage of pit latrine was found in zone D (97 percent) followed by zone E (96.4 percent). The flush latrines were mostly found in zone A (30.4 percent).

xvi. Duration of electricity (X16)

The provision of electricity is considered as a parameter of development and QoL. The least duration of electricity (less than six hours) was

found in zone E (73.2 percent) while as the duration of electricity (6-8 hours) was found highest in zone C (46.5 percent).

1.5 Levels of quality of life

Quantitative analysis of the variables was done to estimate the QoL of the north Kashmir. Aggregates of all the variables have been taken. A composite score has been calculated by adding up the total of all the variables for different altitudinal zones (**Table 2**). The mean value of composite score is 12.49 with standard deviation of 1.202 (**Table 3**). The levels of QoL of Gujjars under deviation are grouped in **Table 4**.

Table 2. Selected Variables for QoL estimation for North Kashmir Himalayas

Parameters		Indicator	Weight	Altitude zone (in Meters)									
				Zone A (1600-1800)		Zone B (1800-2000)		Zone C (2000-2200)		Zone D (2200-2400)		Zone E (2400 &Above)	
				HH (%)	X Value	HH (%)	X Value	HH (%)	X Value	HH (%)	X Value	HH (%)	X Value
X₁	Housing Structure	Kotha	1	0.00	0.00	4.9	0.05	6.9	0.07	9.1	0.09	8.9	0.09
		Kuchha	1	58.4	0.58	56.5	0.57	60.4	0.60	60.4	0.60	58.9	0.59
		Semi-Pucca	2	20.0	0.40	20.1	0.40	20.8	0.42	21.2	0.42	21.2	0.42
		Pucca	3	21.6	0.65	18.5	0.56	11.9	0.36	9.1	0.27	10.7	0.32
X₂	Satisfaction with Housing	Yes	1	16.0	0.16	7.1	0.07	8.2	0.08	6.1	0.06	8.9	0.09
		No	0	84.0	0.00	92.9	0.00	91.8	0.00	93.9	0.00	91.1	0.00
X₃	Age of Buildings	Above 40 yrs	1	10.4	0.10	43.5	0.43	45.3	0.45	51.5	0.52	44.6	0.45
		30-39 yrs	1	44.8	0.45	22.8	0.23	31.4	0.31	30.3	0.30	35.7	0.36
		20-29 yrs	2	13.6	0.27	17.4	0.35	10.1	0.20	12.1	0.24	5.4	0.11
		10-19 yrs	3	12.8	0.38	5.4	0.16	5.7	0.17	3.0	0.09	3.6	0.11
		< 10 yrs	3	18.4	0.55	10.9	0.33	7.5	0.23	3.0	0.09	10.7	0.32
X₄	Ventilation	Proper	1	38.4	0.38	30.4	0.30	25.2	0.25	21.2	0.21	21.4	0.21
		Improper	0	61.6	0.00	69.6	0.00	74.8	0.00	78.8	0.00	78.6	0.00
X₅	Education level	Illiterate	1	56.8	0.57	60.2	0.60	56.2	0.56	60.9	0.61	58.5	0.58
		Primary	2	16.1	0.32	16.2	0.32	16.9	0.34	20.5	0.41	16.3	0.33
		Middle	2	18.2	0.36	17.3	0.35	17.2	0.34	14.6	0.29	18.3	0.37
		Secondary	3	6.2	0.19	4.8	0.14	7.1	0.21	3.3	0.10	5.2	0.16
		Higher	4	2.7	0.11	1.4	0.06	2.5	0.10	0.7	0.03	1.7	0.07

X₆	Satisfaction with Education	Yes	1	31.2	0.31	18.5	0.18	13.2	0.13	12.1	0.12	12.9	0.13
		No	0	68.8	0.00	81.5	0.00	86.8	0.00	87.9	0.00	87.1	0.00
X₇	Level of Income	< 6000	1	64.8	0.65	64.7	0.65	64.2	0.64	72.7	0.73	66.1	0.66
		6000-10000	2	14.4	0.29	21.2	0.42	20.1	0.40	15.2	0.30	17.9	0.36
		>10000	3	20.8	0.62	14.1	0.42	15.7	0.47	12.1	0.36	16.1	0.48
X₈	Satisfaction with income	Yes	1	8.0	0.08	9.8	0.10	9.5	0.10	6.5	0.07	8.9	0.09
		No	0	92.0	0.00	90.2	0.00	90.5	0.00	93.5	0.00	91.1	0.00
X₉	Levels of Occupation	Labour	1	26.5	0.26	23.5	0.24	26.7	0.27	22.1	0.22	18.9	0.2
		Agriculture	1	46.7	0.47	45.1	0.45	43.2	0.43	59.2	0.59	53.2	0.5
		Others	2	10.9	0.22	12.3	0.25	14.2	0.28	9.2	0.18	12.6	0.3
		govt. employee	3	15.9	0.48	19.1	0.57	15.8	0.48	9.5	0.29	15.3	0.5
X₁₀	Satisfaction with Occupation	Yes	1	29.6	0.30	25.5	0.26	26.4	0.26	15.5	0.16	18.7	0.19
		No	0	70.4	0.00	74.5	0.00	73.6	0.00	84.5	0.00	81.3	0.00
X₁₁	Family Possessions	Radio	0	69.6	0.00	84.3	0.00	72.4	0.00	87.9	0.00	80.4	0.00
		T.V	1	20.8	0.21	11.4	0.11	11.8	0.12	6.0	0.06	12.5	0.13
		Vehicles	3	9.6	0.29	4.3	0.13	15.8	0.47	6.1	0.18	7.1	0.21
X₁₂	Satisfaction with family Possessions	Yes	1	25.6	0.26	15.8	0.16	26.4	0.26	12.5	0.13	14.3	0.14
		No	0	74.4	0.00	84.2	0.00	73.6	0.00	87.5	0.00	85.7	0.00
X₁₃	Health Status	Bad	0	56.8	0.00	69.6	0.00	74.8	0.00	78.8	0.00	75.0	0.00
		Good	1	43.2	0.43	30.4	0.30	25.2	0.25	21.2	0.21	25.0	0.25
X₁₄	Satisfied with heath system	Yes	1	20.8	0.21	28.8	0.29	28.3	0.28	13.8	0.14	27.6	0.28
		No	0	79.2	0.00	71.2	0.00	71.7	0.00	86.2	0.00	72.4	0.00
X₁₅	Latrine facility	Pit	1	69.6	0.70	91.3	0.91	96.2	0.96	97.0	0.97	96.4	0.96
		Flush	3	30.4	0.91	8.7	0.26	3.8	0.11	3.0	0.09	3.6	0.11
X₁₆	Duration of electricity	Up to 6 -8 hours	1	37.6	0.38	34.2	0.34	46.5	0.47	30.3	0.30	26.8	0.27
		8 hours above	2	62.4	1.25	65.8	1.32	53.5	1.07	69.7	1.39	73.2	1.46

Source: Primary survey, 2015-16; X¹ to X¹⁶ represent variables; HH represent Households

Table 3. Composite Scores for Altitudinal zones of North Kashmir Himalayas

Altitude Zone(m)	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇	X ₈	X ₉	X ₁₀	X ₁₁	X ₁₂	X ₁₃	X ₁₄	X ₁₅	X ₁₆	X	X-X	(X-X) ²															
Zone A (1600-1800)	1.63	0.16	1.76	0.38	1.55	0.31	1.56	0.08	1.43	0.30	0.50	0.26	0.43	0.69	1.61	1.62	14.26	1.77	3.14															
Zone B (1800-2000)	1.57	0.07	1.50	0.30	1.47	0.18	1.49	0.10	1.51	0.26	0.24	0.16	0.30	0.55	1.17	1.66	12.55	0.06	0.004															
Zone C (2000-2200)	1.45	0.08	1.36	0.25	1.56	0.13	1.52	0.10	1.46	0.26	0.59	0.26	0.25	0.52	1.08	1.53	12.77	0.28	0.08															
Zone D (2200-2400)	1.39	0.06	1.24	0.21	1.44	0.12	1.39	0.07	1.28	0.16	0.24	0.13	0.21	0.34	1.06	1.70	11.03	-1.46	2.13															
Zone E (2400-5300)	1.42	0.09	1.34	0.21	1.50	0.13	1.50	0.09	1.43	0.19	0.34	0.14	0.25	0.39	1.07	1.73	11.83	-0.66	0.43															
	Mean = 12.49															S.D.= 1.202															Sum	62.44		5.78

Table 4. Levels of quality of life of Gujjars in North Kashmir Himalayas

Levels of quality of life	Statistical value	Composite score	Name of the Altitudinal zone
Good	to +2SD	13.69-14.89	Zone A
Medium	to + SD	12.49-13.69	Zone B and C
Poor	to – SD	11.28-12.49	Zone E
Very Poor	to – 2SD	10.08-11.28	Zone D

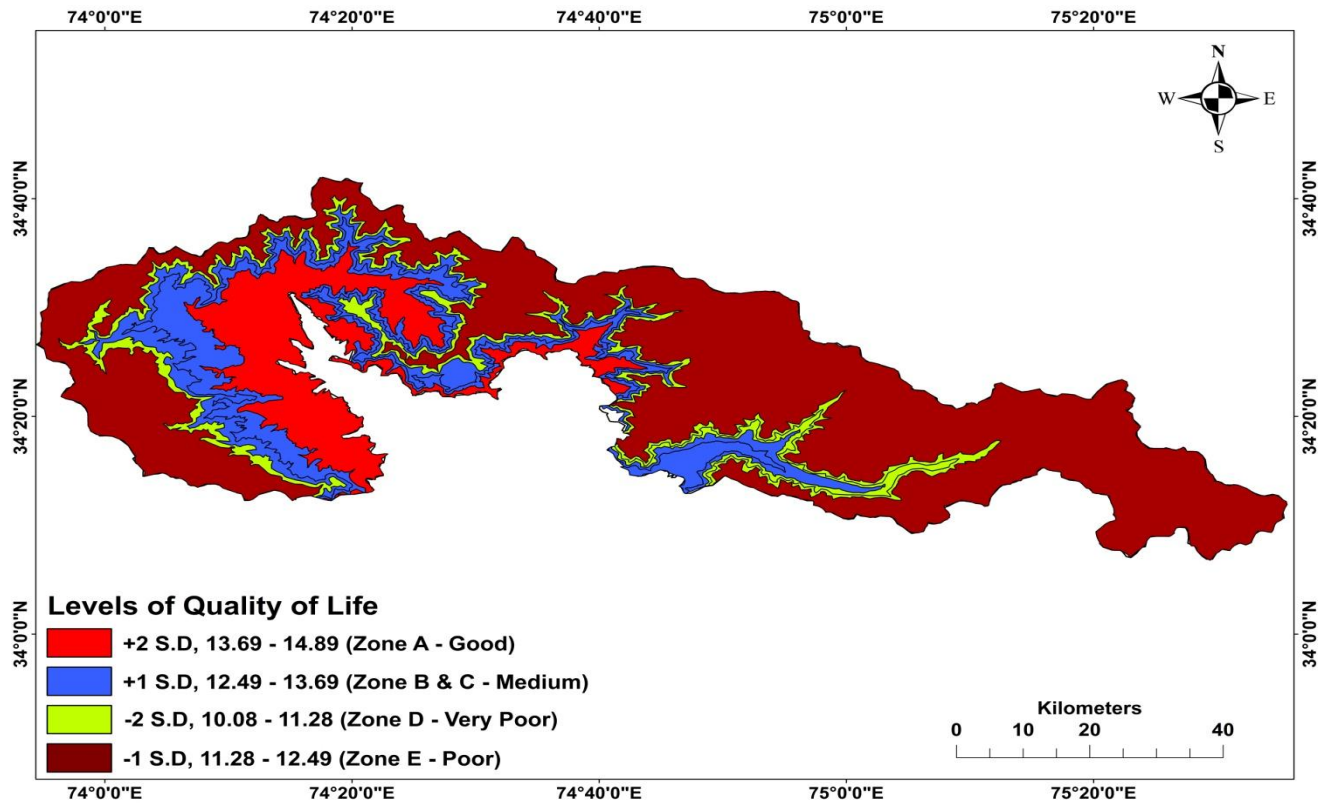


Fig 2. Levels of QoL in North Kashmir Himalayas

The study area can be divided into four levels of QoL on the basis of the quantitative analysis of the selected variables. Altitude zone A enjoys good QoL and hence the condition of Gujjars inhabiting zone A is better than those in other altitude zones. The zone B and zone C have medium QoL as some of the basic facilities such as roads, housing conditions and drinking water facilities are adequate. The altitude zone E has low QoL. The basic facilities are lacking in this altitude zones. The altitude zone D has very poor QoL. The housing conditions, drinking water and other facilities are lacking and are in deplorable condition.

1.6 Planning Improvements for Gujjars of North Kashmir Himalayas

Gujjar community is a unique ethnic group of Jammu and Kashmir State having low socio-economic status and different cultural identity. Their economy mainly depends on the primary activities, products of their flock and the use of natural pastures round the year (Khatana, 2007). The Gujjars inhabiting

Himalayan region generally lack housing facilities, health care, drinking water and education system (Koundal, 2012; Rafiq, 2014). The Gujjars of north Kashmir have dilapidated housing, lack of drinking water, low educational status, unemployment and indoor air pollution. Thus developmental planning is necessary for the Gujjars of north Kashmir Himalayas. There are various methods for planning improvements. The most common method is prioritization. Priorities determination could be an effective and useful method in reforming control programs and management in different communities. Prioritization helps in developing strategies and programs and to address the strengths and weaknesses of the community (Mokhtari, 2013). The prioritization was done by standard deviation and four levels of priority zones were identified. These were low priority zone, medium priority zone, high priority zone and very high priority zone.

Zone of Low Priority: This is the lowest altitude zone (zone A) comprising of the villages of Gund, Saderkoot, Aloosa,

AhmiSharief and Chitibandi. This zone has good water quality and highest percentage of buildings below 10 years of age in the study area. The primary education level was found to be 37.2 percent and higher education was found to be 6.3 percent. Moreover, 20.8 percent households have income of Rs. above 10000/month in this zone. The water quality index was found good and the total disease incidence was found as 19.21 percent which is the lowest of all the altitude zones. Though this zone is categorized as a zone of lowest priority thereby indicating that the standard of living is good in this zone, the overall standard of living is very poor as compared to the state average and native population.

Zone of Medium Priority: The altitude Zone B and C have medium priority as computed by standard deviation. This zone comprises of the villages of ChuntWaliwar, Khurhama, Chuntmullah, Wangat, Chatargul, Muqam, Malangam, Kalrooch, Manigam, Shiltra, Kuligam, Sumlar, Akhal and Hayan. In zone B and C, the literacy rate was found at 39.8 percent and 43.8 percent respectively. About 35.5 percent of the total inhabitants have income of Rs. Above 10000/month in both zones and 64.3 percent households have income of below Rs. 6000/month. The quality of water is good but the buildings are of low quality as kothas constitute 11.8 percent of the dwellings. This is the medium altitude zone of the study area and basic facilities and amenities need to be extended to the masses.

Zone of High Priority: This zone (zone E) comprises of the villages of Gagangeer and Hari Ganiwan. This zone has low literacy rate (41.5 percent) and hence 66.1 percent households have income of below Rs. 6000/month. The presence of kuchha houses (58.9 percent) shows that the quality of housing is very dilapidated. Moreover, about

44.6 percent of the buildings are more than 40 years old. Agriculture is the main occupation as more than 53 percent of the total workforce is engaged with primary activities. The level of satisfaction with various indicators/parameters was found to be low and therefore this zone falls under high priority. It is suggested that the government should extend educational facilities and provide employment opportunities so that the region could shift from primary to secondary and tertiary activities. This would not only raise their family income but would also result in the construction of concrete houses with better facilities and proper ventilation.

Zone of Very High Priority: This Zone (zone D) comprises of the villages of Farkhan, Erin Dardpora and Kulan. The literacy rate is lowest in this zone (39.1 percent) with only 1.7 percent of the population with higher education. The region is economically very backward as 72.7 percent of the households have an average monthly income of below Rs. 6000. This has resulted in to poor quality of housing as about 60.4 percent households are residing in kuchha houses. Moreover, more than half of the buildings are very old which always pose a threat to life and property especially during flash floods, earthquakes and accidental fires. The quality of water is very poor and most of the people have no choice than to rely on open water sources. This zone has highest priority among all zones because it lacks behind in all the basic facilities like housing, education, water quality, sanitation etc. The short-term curative measures could include immediate provision of drinking water facilities, zero interest housing loans and adequate employment opportunities. However, free education needs to be imparted in this zone so that people could increase their standard of living and become self-sufficient in the long run.

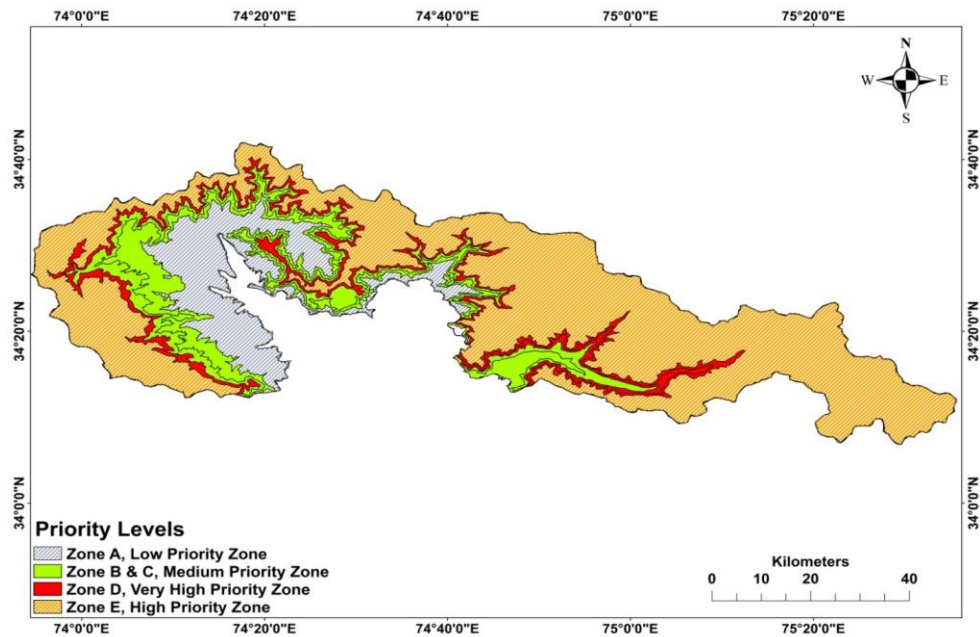


Fig. 3. Life Quality Based Priority Levels in North Kashmir Himalayas

CONCLUSIONS

Gujjars are the semi-nomadic ethnic population of the state of Jammu and Kashmir mainly depending on traditional economy. Their socio-economic status is very low as compared to the native inhabitants. The QoL deteriorates as we move from lower to higher altitudes except zone E. It is found that the altitude plays an important role in the provision of various facilities and amenities necessary for maintaining a higher standard of life. Higher altitudes characterized by rugged terrain and limited accessibility not only offer challenges for the government to provide basic facilities but also leaves its inhabitants with limited opportunities for making a living. There are various parameters of QoL which depicted varied results among different altitude zone. Therefore, the study area was divided in different altitude zones which were subsequently prioritized on the basis of the evaluated parameters of QoL. The prioritization not only helps to identify the altitude zones with lowest QoL but also identifies the indicators which need immediate attention. Low literacy levels, economic backwardness, poor quality of housing and inadequate drinking water facilities are identified as major hurdles in the development of Gujjar community. The study

identifies four priority zones and proposes the strategies which could be implemented so that the quality of an important and often ignored ethnic community (Gujjars) is improved.

REFERENCES

- Anuradha, S. 2006. Quality of Life of Slum Dwellers: A case study of Bindtoli, Patna West. *Annals NAGI.*, **26**: 72-86.
- Census. 2011. Government of Jammu and Kashmir, India.
- Dasgupta, P. and Weale, M. 1992. On Measuring the Quality of Life. *World Development*, **20**(1):119-131.
- Discoli, Rosenfeld, Juan,s., Martini, Barbero, Ferreyro and Dicroce. 2006. Urban Integration and Disintegration Forces: The habitants/Users Perception in an urban life Quality Model for the Surroundings of LaPlata, Buenos Aires, Argentina. *A paper presented at the 42nd International Society of City and Regional Planners (IsoCARP) Congress.*

- Felce, D. and Perry, J. 1995. Quality of life –its definition and measurements. *Research in development disabilities*, **16**(1):51-74.
- Govindaraju, B.M. 2012. Quality of life in slums women- A case study of Mangalore city. *Journal of economics and sustainable development*, **3**(1): 1-4.
- Hussain, M. 2002. *Human Geography*. Rawat publications, Jaipur.
- Hussain, M. 1987. *Systematic Geography of Jammu & Kashmir*, Rawat Publication, Jaipur.
- Jha, D.K. and Tripathi, V.K. 2014. Quality of life in slums of Varanasi City: A comparative study. *Transactions*, **36**(2): 171-183.
- Khatana, R.P. 2007. Gujari Language and Identity in Jammu and Kashmir, Kashmir News Network, *Language Section (koshur.org)*.05-31.
- Koundal, V. 2012. Poverty among nomadic Gujjars – A case study of J & K and H.P. *International Journal of Marketing, Financial Services & Management Research*, **1**(8): 206-230.
- Krishnakumar, P. 2001. Quality of life of low income groups – A micro-level study :**34**: 5.
- Kumar and Abay. 2007. The quality of life of the elderly population of Bihar: a case study of Patna district Bihar. *Unpublished Ph.D thesis Jawaharlal Nehru University*.
- Mokhtari, M., Banaye, M. J., Khoinagh, A.J. and Naeeni, K.H. 2013. Community assessment for identification and prioritization of problems to establish health promotion operational plans. *Journal of Research & Health Social Development & Health Promotion*, **3**(1): 296-304.
- Nagpal, R. and Sell, H. 1985. Subjective Well-being. *Health Paper No. 7*. New Delhi: SEARO.
- Olajuyigbe, A.E., Osakpolor, S. and Adegboyega, S.A. 2013. Assessment of Quality of Life Using Geographical Information System Approach for Poverty Alleviation Decision-Making. *International Journal of Sustainable Land Use and Urban Planning*, **1**(1): 1-20.
- Puskorius, S. 2015. Methodology of Calculation the Quality of Life Index. *International Journal of Information and Education Technology*, **5**(2):156-160.
- Rahman, M. U. Asad, M. Ahmad, W. 2020. Factor Enhancing Quality of Life. *Global Economics Review*, **V**(1): 325-335.
- Rafiq, R. 2014. Socio-economic profile of Dodhia Gujjars in Jammu and Kashmir. *International journal of multidisciplinary research in social and management sciences*, **2**(3): 8-82.
- Raza, M. Ahmad, A. and Mohammad, A. 1978. The Valley of Kashmir- A Geographical Interpretation, Vol.1-*The Land*, Vikas Publishing House.
- Sen, A. 1985. Well-Being, Agency and Freedom: The Dewey Lectures. *Journal of Philosophy*, **82**(4): 169-221.
- Smith, D.M. 1977. Human geography – A welfare approach. *Edward Arnold publisher's Ltd, London*.
- Streimikiene, D. 2014. Housing Indicators for Assessing Quality of Life in Lithuania. *Intellectual Economics*, **8**(1): 25–41.
- S, Javed. J, Salma. Khan, A. 2016. Effect of Education on Quality of Life and Well Being. *The International Journal of Indian Psychology*, **3**(4): 119-120.

Sundari, S. 2003. Quality of life of Migrant households in urban slums, Proceedings of third international conference on Environment and Health, Chennai, India. 537-552.

Torbjorn, M. 1983. Quality of life, problems of assessment and measurement, *UNESCO*.

United Nations Development Programme. 2010. *Human Development Report New York*.

WHO. 1990. World development Report, New York. *Oxford University Press*.