

Socio demographic and basic living characteristics in relation to development and change in Nepal based on Nepal Living standard Survey 2022/2023 data

Bhesh Nath Sapkota¹

Abstract

The V shaped curve is obtaining in Nepal while decreasing age from lower to higher age group which is indicator of constant increase mortality. Almost all population are dying between 60-79 years is worst indicator of development and change process. It indicated that the health condition of adults and old population is worst compared with infant and children. Age- sex distribution are basic population characteristics and indicator of development and change. In this article the 95 per cent confidence interval technique has used with “population adjusted” with population census 2021 data to analyzed Nepal Living Standard Survey data 2022/23 by Python 3.12 tools. The narrow confidence interval indicated precise methodology chosen while designing and conducting survey. More than 5 per cent households has not any type of toilet in Nepal still today.

Keywords: Age-sex composition, sex ratio, socio demography, migration status, source of drinking water.

Introduction

This article prelect the socio demographic and basic living characteristics in relation to development and change in Nepal from Nepal living Standard Survey 2022/23 (NLSS IV) data. The first Nepal Living Standard Survey was conducted in Nepal in 1995/96 and NLSS IV was fourth of its kind after 27 year. All series of Nepal Living Standard Survey was conducted on the technical assistance of the World Bank. In Nepal the National Statistical Office (then Central Bureau of Statistics) is responsible to conduct all series of the Living Standard surveys since 1996 to date. The Living Standard Survey 2022/23 is national representative sample survey and it represents national characteristics. Drawing on available NLSS IV data, particular focus has given on describing the age-sex structure, family composition, socio demography, education status, migration status and basic health and hygiene characteristics of the heads of the household and other respondents.

Methodology

The World Bank has designed, developed and updated the Living Standard Survey Methodology and which has incorporated in all NLSS surveys while conducting, operation and analyzing work. Nepal Living Standard Survey 2022/23 was conducted round a years in Nepal in all seasons in 2022/23. The survey has covered 9600 households from Nepal with all three ecological belts, districts, provinces and urban rural areas. The country was divided into 800 Primary Sample Unit (PSU) and from each PSU 12 households were enumerated. This article deals with frequencies and 95 per cent confidence intervals to flourish socio demographic characteristics in Nepal. The percentage, frequencies and 95 per cent confidence intervals were only used tools to analyze data in this article. In this article the range of confidence interval has taken as tools to measure the data quality. The narrow range measure precise methodology chosen while conducting survey. The range of confidence interval also provides space to participate debate about the subject matter. Besides the 95 per cent confidence interval

¹ Associate Professor (E), Population Studies Department, Padmakanya Multiple Campus, TU.

Email: bhesh.nath.sapkota@gmail.com

percentage is also taken as tools to measure the data. The 95 per cent confidence interval indicated that there are possible to conduct many different samples from the same population (population of Nepal) and NLSS IV is only one of this kind of survey. The 95 per cent confidence interval (5% may have chance to fall outside range) indicates the certainty to contain all population characteristics (parameter) within the range from the whole population. In the other word we can say that suppose we take many different sample from the same population about 95 per cent (95 sample out of every 100 sample) results yields within the range of confidence interval in all age groups. In the other word we can say (as general rule) that similar outcome obtains from same population in different sampling process in contemporary period and situation. The National Population and Housing Census 2021 was “universe” of Nepal Living Standard Survey 2022/23. In this study Nepal Living Standards Survey (NLSS IV) was “subset” of the “universe set Census.” While analyzing NLSS IV data the findings has “weighted” with National Population and Housing Census 2021 data. The “weighted number” was adjusted by National Statistics Office (NSO) itself in each households separately. While calculating 95 per cent Confidence Interval (95 % CI) the population must be adjusted by its “weighted number.”

Source of data

This research is done with the Nepal Living standard Survey 2022/23 (NLSS IV) data available from the National Statistical Office (NSO) for research purpose with authentic letter. The socio demographic characteristics in Nepal has analyzed from secondary available data source.

Data analysis and finding

While analyzing Nepal Living Standard Survey 2022/23(NLSS IV) data Python 3.12 tools was used to obtained following socio demographic characteristics yield in Nepal:

Age structure of population

Age is duration of survival after birth. The age period counts in completed years in the demographic data collecting and analysis activities. Age classifies in demography with five years interval but below at first 0 to 4 years is classifies and then it is continuous classified as five years interval.

Table 1

Distribution of study population by age groups

Age group	%	95%CI	N
0-4	8.8	[8.4-9.2]	2529171
5-9	9.6	[9.2-10.1]	2764160
10-14	9.9	[9.5-10.3]	2846837
15-19	9.9	[9.5-10.3]	2840449
20-24	9.0	[8.6-9.5]	2586161
25-29	8.1	[7.7-8.6]	2332581
30-34	6.8	[6.4-7.2]	1944125
35-39	6.8	[6.5-7.1]	1956264
40-44	5.9	[5.6-6.2]	1698571
45-49	5.3	[5.0-5.6]	1520175
50-54	4.9	[4.7-5.2]	1421673
55-59	4.0	[3.8-4.3]	1158254
60-64	3.5	[3.2-3.7]	998009
65+	7.5	[7.0-8.0]	2144073
Total	100		2,87,40,504

In table No. 1 indicated that the highest number (9.9%) constituted in age group (15-19) years in survey. The sample (9.9%) lies in the center of 95 per cent confidence interval (here in after interval) range 9.5-10.3 per cent indicated good reliability and validity of survey method and relative narrow confidence interval ($10.3 - 9.5 = 0.8$) suggest precise estimated true proportion of population in the age group (15-19) years in the entire population (95 %) of Nepal. Similarly, in the sample the second highest number (9.9%) constituted in the age group (10-14) years and entire population (95 %) has range (9.5-10.3) per cent where the sample lies in the middle of range and it has narrow width indicated precise data and good reliability and validity of survey method. Age group (5-9) years constitute 9.6 per cent in sample and entire population (95 %) has range (9.2 - 10.1) percentage which has narrow range difference (0.9%) indicated precise data and good reliability and validity of the survey method. The age group (0-4) years constituted 8.8 per cent in the sample where entire population (95%) has ranged between (8.4 - 9.2) percentages with narrow range differences (0.8%) indicated the precise data and good reliability and validity of data. In the sample the highest number of (9.9%) consisted in age group (15-19) followed by (10-14) age group (9.9%) and (0-4) years age group (8.8%). The highest number constituted in sample in these age group was due to excessive population growth (2.25%) recorded in 2001 population census. Above age group (15-19) the percentage of sample seemed reducing due to migration and increased adult mortality although there existed high population growth after 1981 to 2001 population census. The age group 65 above years and above (aging population) also constitute 7.5 per cent in this sample and entire population (95 %) range 7-8 indicated precise data and range difference narrow indicated reliability and validity of sample method. The percentage of aging population has increasing in Nepal since 1991 census due to continuous reduction of mortality and increasing in life expectancy. The 95 per cent confidence interval for all age groups has narrow range (less than 0.8 in most of age groups and 1.0 in 65 years and above years) indicated high reliability and precise methodology chosen while conducted NLSS IV.

Sex structure and family composition of population

To be male or female is biological process and out of human control. Till now Science is also unable to select male or female before birth. Birth of male and female is natural phenomena. In nature, male born more than female. In any society 104-112 males born in around 100 female birth but male dies more than female.

Table 2

Distribution of study population by sex

Sex	%	95% CI	N
Male	47.0	[46.4-47.6]	13500605
Female	53.0	[52.4-53.6]	15239898
Total	100.0		2,87,40,504

Table 2 indicated that there was 47.0 per cent male in sample and (46.4-47.6%) range for entire population (95%) with range difference 1.2 per cent indicated precise data. Similarly there was 53.0 per cent female and (52.4-53.6%) range for entire population (95%) with range difference 1.2 per cent indicated precise data. Both for male and female the sample per cent lies in the middle of population range indicated good Reliability and Validity of sample method. In population census 2021 there was 48.87 per cent male population and 51.12 per cent female population exactly. Both in Census and sample male population lies below 50 per cent and female above 50 per cent. The sex ratio (male/female expressed in 100) was 88.58 in NLSS IV which indicated that there were heavy male emigration process was recorded in Nepal. The sex ratio was 95.59 in 2021 census; it was 94.16 in 2011 census and 99.76 in 2001 census respectively. This indicated that large number of male population was emigration from Nepal since 2011.

Table 3*Distribution of study population by family composition*

	%	95% CI	N
Family size			
1-2	9.8	[9.3-10.3]	2,802,961
3-4	37.8	[36.6-39.1]	10,870,968
5-6	33.6	[32.7-34.5]	9,660,699
7+	18.8	[17.6-20.1]	5,405,875
Total	100		28,740,504
Children below 15			
0-14	28.3	[27.6-29.0]	8,140,167
15 and above	71.7	[71.0-72.4]	20,600,336
Total	100		28,740,504

Table 3 indicated that in the sample highest (37.8%) number of household consists 3 to 4 members and it can be confident (95%) that true percentage lies somewhere 36.6 per cent and 39.1 per cent if repeated sample many (95 out of 100) times from the same universe (Nepal). The sample (37.8%) has twisted left side indicated field operation error with narrow (2.5%) interval indicated uncertainty in field operation. Similarly 33.6 per cent sample consists 5 to 6 family members and it can be confident that true percentage lies somewhere between 32.7 percent and 34.5 percent if repeated sample many (95 out of 100) times from the same universe. Similarly in the sample 18.8 percent households consists more than 7 family members and it can be confident (95%) that true percentage lies somewhere between 17.6 percent and 20.1 percent if repeated sample many (95 out of 100) times from the same universe (Nepal). The sample (18.8%) lies in the center of range with narrow (2.5%) interval indicated precise methodology chosen while conducted sample operation process. In the sample 9.8 per cent households consists only 1 and 2 family members and it can be confident that true percentage lies somewhere between 9.3 per cent and 10.3 per cent if repeated sample many times (95 out of 100) from the same universe. The sample (9.8%) lies in the center of range with narrow (1%) interval indicated precise methodology chosen while conducted the survey. In the sample 28.3 per cent households consists below 14 years children and it can be confident that true percentage lies somewhere between 27.6 per cent and 29.0 per cent if repeated sample many times (95 out of 100) from the same universe (Nepal). The sample lies in the center of range with narrow (2.4%) interval indicated precise methodology chosen while conducted the survey. The sample 71.7 percent households consists 15 and above years population and it can be confident that the true percentage lies somewhere between 71.0 and 72.4 years if repeated sample many (95 out of 100) times from the same universe (Nepal). The sample (71.7%) lies in the center of range indicated precise methodology chosen while conducted the survey. This indicated that only older generation have more family members and new generation have shifted fertility in the sample.

Socio demography of population

The Nepali population were immigrated from west, north, south and east in the past and current Nepal is made from highest social and ethnical stratification. Following table 4 presented the socio demography in sample study.

Table 4*Distribution of study population by socio demography*

Caste/ethnic groups	%	95% CI	N
Hill Caste	28.5	[26.2-30.9]	8184831
Madhesh/Tarai Caste	15.8	[13.8-18.1]	4551596
Mountain/Hill Janajati	25.3	[23.3-27.5]	7284561
Tarai Janajati	10.8	[8.3-13.8]	3101121
Hill Dalit	9.8	[8.7-11.1]	2828865
Madhesh/Tarai Dalit	5.1	[4.1-6.3]	1462977
Religions/Linguistic group	4.5	[3.3-6.1]	1298275
Others & Not stated	0.1	[0.0-0.3]	28278
Total	100.0		2,87,40,504

Table 4 indicated that the highest number (28.5%) constituted by hill caste group in sample where as it might lies in range 26.2 per cent to 30.9 per cent for entire population (95%) in Nepal. The sample lies in the middle of entire population with range differences 4.7 which is below 5 per cent indicated more precise data estimation and large number of more enumerated areas (800) taken. The second highest number (25.3%) constituted by mountain/hill Janajati in sample, where as it might lies in range 23.3 per cent to 27.5 per cent for entire population (95%) in Nepal. Here also the sample (25.3%) lies in the center of range (23.3-27.5%) and the range interval is less than 5 (3.3%) per cent which we desire in the sample process. The third largest social demographic group in Nepal is Madhesh/Tarai group which constituted 15.8 per cent in Nepal and it may lies in range 13.8 per cent to 18.1 per cent in entire (95%) population in Nepal. While analyzing sample percent and range the data has good quality and methodology was appropriate while conducting survey. The fourth highest group constituted in sample was Hill Dalit (9.8%) and this group may lie in range 8.7 per cent to 11.1 per cent in entire population (95%) in Nepal. The Tarai/Madhesh Dalit group constituted 5.1 per cent in sample and it may lies in range 4.1 per cent to 6.3 per cent in entire population (95%) of Nepal. The religious/linguistic identity group constituted 4.5 per cent in sample where as it may lies in range 3.3 per cent to 6.1 per cent in entire population (95%) in Nepal. In this sample, Janajati constituted highest (36.1%) followed by Hill Caste (28.5%), Madhesh Caste (15.8%) and Dalit (14.9%). In socio demography religious/linguistic identity groups also present in significant number (4.5%) in sample.

Marital status of study population

While turning back to history of marriage fossil identification conformed Homo erectus appeared 1.8 million years ago in Africa and it had practiced one male breeding with one female. Home erectus was highly migratory group and it left Africa when it evolved. Home erectus practiced better organization for hunting and scavenge and to be safe from other animals. It practiced pair bonding between male and female partners to be safe in child birth period. Pair bounding provides safety and foods to mother and children. The female partner may got food from male partner at the time of pregnancy period. The male also provided safe to mother and children in difficult period. Long duration of infancy period press them to develop family life (Ember, 2018:107; Ember, 2002:115). We have 1.8 million years history of marriage practice. The marital status of people is considered for 10 years and above.

Table 5*Distribution of study population by marital status*

Marital status	%	95% CI	N
Never married	32.1	[31.4-32.7]	7518776
Married	60.3	[59.6-61.0]	14130826
Widowhood	6.2	[5.9-6.6]	1465105
Divorce/Separated	1.4	[1.2-1.7]	332467
Total	100.0		2,34,47,173

Table 5 indicated that 32.1 percent sample population were never married and we are 95 percent confident that 31.4 to 32.7 percent entire population in Nepal were never married. This implies that if we repeated this sampling process many times and calculated a confidence interval each time, about 95 out of every 100 of those intervals would contain the actual never married population in Nepal. Here the range of confidence interval is narrow (1.3) and the sample (32.1%) lies in the middle of range indicated more certainty and precise sampling process. Similarly 60.3 percent sample population were married and we are 95 percent confident that in Nepal (entire population) 59.6 - 61.0 per cent interval contain married population. Here also the sample per cent (60.3%) lies in the center of Range (59.6-61.0) which has narrow Range (1.4) indicated precise sampling process. In sample the percentage of Widowhood is 6.2% and we are 95 per cent confident that entire population lies in the range (5.9-6.6) per cent with range difference (0.7) indicated precise method of sampling. Here also the sample (6.2%) lies in the center of range. Similarly in sample 1.4 per cent population were Divorce/Separated which also lies in the center of range and which has narrow difference (0.5). We are 95 per cent confident that entire population of Divorce/Separated lies in the range 1.2 to 1.7 per cent in Nepal.

Provinces and migration status of population

The constitution of Nepal 2072 has classified Nepal in seven provinces which is new practice in Nepal after formation of Nepal state. The provinces are administrative and development units within federal structure of Nepal. NLSS IV is first of this kind of survey after formation of provinces. The distribution of sample population based on provinces are distributed as follows.

Table 6*Distribution of study population by provinces*

Province	%	95% CI	N
Koshi	16.3	[14.9-17.7]	4675310
Madhesh	22.6	[18.5-27.2]	6486147
Bagamati	20.4	[18.7-22.3]	5869481
Gandaki	8.3	[7.6-9.1]	2396728
Lumbini	19.0	[16.9-21.2]	5447377
Karnali	5.1	[4.7-5.6]	1473115
Sudurpaschim	8.3	[7.4-9.4]	2392344

Table 6 indicated that highest (22.6%) sample population were concentrated in Madhesh and we are confidence (95%) that entire population of Madhesh lies (18.5-27.2) per cent. Here sample lies in center of range which has range interval 8.7 percent which is wider (more than 5%) indicated the uncertainty of sampling process in Madhesh. The second highest number in sample population (20.4%) concentrated in Bagmati and we are confidence (95%) that entire population of Bagmati lies (18.7 to 22.3 per cent). Here the sample percent (20.4%) lies in the

center of range (18.7 - 22.3) which is narrow (3.6%) indicated precise sampling process in Bagmati province. Similarly, the third number in the sample population (19.0%) concentrated in Lumbini and we are confined (95%) that the entire population of Lumbini lies 16.9 to 21.2 per cent range. Here the sample per cent (19.0%) lies in the center of range (16.9-21.2) per cent with narrow range (4.3%) indicated precise sampling process in Lumbini. Similarly the fourth number in sample population (16.3%) concentrated in Koshi and we are confined (95%) that entire population of Koshi lies 14.9 to 17.7 per cent range. The sample (16.3%) lies in center of range with narrow range (2.8%) indicated precise sampling process in Koshi province. Similarly the fifth largest number in sample (8.3%) population concentrated in Sudurpaschim and we are confined (95%) that entire population of this province ranged 7.4 to 9.4 per cent. The sample (8.3%) lies in center of range with narrow interval (2.2%) indicated precise sampling process in Sudurpaschim. The second least number (8.3%) concentrated in Gandaki and we are confined (95%) that entire population of this province ranged 7.6 to 9.1 per cent. The sample lies in the center of range with narrow (1.5%) interval indicated precise sampling process in this region. The least number (5.1%) sample population lies in Karnali Province and we are confined (95%) that entire population of this province ranged 4.7 to 5.6 per cent. The sample (5.1%) lies in center of range with narrow (0.9%) interval indicated precise sampling process in this region.

Migration is movement of people from one place (origin) to another (destination) based on usual place of residence. In this survey change of local government unit is considered as the migrants.

Table 7

Distribution of study population by migration status

Migration status	%	95% CI	N
Non-migrant	38.1	[36.5-39.6]	10939615
Migrant	61.9	[60.4-63.5]	17800888

Table 7 indicated that 38.1 per cent sample population were non-migrants and it is certain (95%) that entire population in Nepal lies in the (36.5-39.6) percent range. Here the sample (38.1%) lies in the center of range which has interval (3.0%) narrow (less than 5%) indicated precise sampling process in case of non-migrants. Similarly 61.9 per cent sample population were migrants and it is certain (95%) that entire population in Nepal lies 60.4 per cent to 63.5 per cent as migrants if we repeated sampling process many time (95 out of 100 sampling). Here the migrants sampled per cent (61.9%) lies in the center of range which has narrow interval (3.1%) indicated precise methodology chosen.

Educational status of population

Education is considered as the key of change in modern society. To be education is a life style in the current modern society. Human development report aims to be educated by all people which is not attained till now especially for developing countries.

Table 8

Distribution of study population by literacy status

Literacy status	%	95% CI	N
Illiterate	22.6	[21.8-23.5]	5929345
Literate	77.4	[76.5-78.2]	20281988

Table 8 indicated that 22.6 percent sample population were illiterate and we were 95 per cent confident that in entire population (Nepal) about 21.8 - 23.5 percent interval contain illiterate population. Here sample per cent (22.6%) lies in the center of range which has narrow value

(1.7%) indicated precise sampling process. Similarly 77.4 per cent sample population were literate and we are confident (95%) that in entire population (Nepal) about 76.5 to 78.2 per cent population were literate. Here the sample per cent lies in the center of range which has narrow value (1.7%) indicated precise sampling process.

Table 9

Distribution of study population by past level of education attainment

Level of education	%	95% CI	N
Past education level			
Levelless education	0.2	[0.1-0.3]	18781
Primary	26.4	[25.3-27.5]	3102914
Secondary	37.8	[36.1-39.4]	4437418
SLC and above	35.7	[33.6-37.8]	4193815

Table 9 indicated that highest number (37.8%) of sample population has passed secondary level education in the past time and we are conform (95%) that the range of entire population (Nepal) lies in the range 36.1 per cent to 39.4 per cent. The sample per cent (37.8%) lies in the middle of range and which has narrow (3.3%) interval indicated precise methodology chosen. The second highest number (35.7%) had passed SLC and above education and it is certain (95%) that entire population (Nepal) lies in the range (33.6 - 37.8%) if we chose many sample (95 out of 100) in Nepal. The sample per cent (35.7%) lies in the middle of range and which has narrow (4.2%) interval indicated precise methodology chosen. The third highest sample population (26.4%) had passed primary level of education in the past and we are confirmed (95%) that entire population (Nepal) lies in the range 25.3 percent to 27.5 percent if we chose many sample (95 out of 100) in Nepal. The sample percent (26.4%) lies in the center of range and which has range difference (2.2%) indicated precise methodology while conducting survey. The least number (0.2%) sample population had obtained loveless (literate) education and we are certain (95%) that the entire population (Nepal) lies in the range 0.1 percent to 0.3 percent if we chose many sample (95 out of 100) in population of Nepal. The sample (0.2%) population lies in the center of range and which has narrow interval indicated precise methodology chosen.

Table 10

Distribution of study population by current level of education attainment

Current education level	%	95% CI	N
Elementary education	13.3	[12.3-14.2]	1081759
Primary	38.1	[36.8-39.5]	3113865
Secondary	28.6	[27.6-29.7]	2337654
SLC and above	20.0	[18.6-21.4]	1628961

Table 10 indicated that highest number (38.1 %) sample population are currently studying in primary level and we are certain (95%) that the entire population (Nepal) lies in the range 36.8 to 39.5 percent if we chose many samples (95 out of 100) in population of Nepal. The sample (38.1%) lies in the center of range which has narrow (2.7%) interval indicated precise methodology chose while conducted survey. The second highest number of sample population (28.6%) are currently studying in secondary level and it is certain (95%) that the entire population (Nepal) lies in the range 27.6-29.7% if we chose many samples (95 out of 100) in the population of Nepal. The sample (28.6%) lies in the center of range which has narrow interval (2.1%) indicated precise methodology chosen. The third highest number (20.0%) sample population are currently enrolling SLC and above population and it is certain (95%) that entire population (Nepal) lies in the range (18.6 - 21.4%) if we chose many sample (95 out of 100) in population of Nepal. The sample (20.0%) lies in the center of range and which has

narrow interval (2.8%) indicated precise methodology chosen. The least number (13.3%) of sample population are enrolling in elementary education and it is certain (95%) that entire population (Nepal) lies in the range (12.3 - 14.2%) if we chose many sample (95 out of 100) in population of Nepal. The sample (13.3%) lies in narrow interval (2.1%) indicated precise methodology chosen.

Health and hygiene characteristics

It is considered as health is wealth of nation. Health of nation is considered as the productive power of the nation. To make strong nation healthy manpower is essential. Laframboise (1973) divide health into key four areas life style, environment, health care and human biology. This concept broaden view towards health from governmental free distribution of medicine to holistic perspective. The health questions on NLSS IV are also based on this border perspective as follows:

Table 11

Distribution of study households by Source of drinking water

Source of your drinking water	%	95% CI	N
Piped water (within compound)	37.4	[34.0-40.8]	10742707
Piped water (outside compound)	10.7	[9.2-12.3]	3068768
Hand pump / tube well	38.8	[35.0-42.9]	11164296
Covered well	1.3	[0.9-2.0]	386856
Open well	2.0	[1.3-3.0]	578031
Spring water	3.6	[3.0-4.4]	1039365
River/rivulets	0.3	[0.2-0.5]	78330
Jar/bottled water	5.2	[4.2-6.4]	1499575
Other source	0.6	[0.3-1.6]	182576

Table 11 indicated that in a sample, 38.8 per cent dwelling drink water from Tube Well/Hand Pump source. There are many possibilities to take different samples from dwelling households population in Nepal. This is just a sample (snapshot) from total dwelling in Nepal. It (38.8%) obtained from just a sample which is unlikely to be exactly same for every repeated sample. We know that statistical results are not always beyond doubt rather they have certain limit, uncertainty and they only deals with average (mean) where they only measures approximately correct. The confidence interval acknowledge uncertainty and gives more realistic range where true (95%) Tube Well user lies somewhere between 35.0 per cent and 42.9 per cent. Based on a specific sample (NLSS IV) 38.8 per cent dwelling reported using Tube Well / Hand Pump as major source of drinking water. It can be 95 per cent (still 5 % may have chance to missed it) confident that the true percentage of dwelling population using Tube Well Water source users lies somewhere between 35.0 and 42.9 per cent. This means that in the long run if repeated sampling out of 100 sample 95 sample may have chance to lies range between 35.0 and 42.9 per cent. The sample lies in the center of range with some where wide interval (7.9%) indicated not precise methodology. The second highest source of drinking water (37.4%) were piped water (private within compound) in a sample and it can be confident that true percentage lies somewhere between 9.2 per cent and 12.3 per cent if repeated sample (95 out of 100). The sample (37.4%) lies in the center of range with wider (6.8%) interval indicate not precise methodology used. The third highest (10.7%) source of drinking water were piped water (public outside compound) in a sample and it can be confident (95%) that true percentage lies somewhere between (9.2-12.3%) if repeated many samples (95 out of 100). The sample (10.7%) lies in the center with narrow (3.1%) interval indicated precise methodology chosen. In a sample 5.2 per cent dwelling drink Jar| Bottled water and it can be confident (95%) that true percentage

lies somewhere between (4.2-6.4%) if repeated many samples (95 out of 100). The sample (5.2%) lies in the center with narrow (2.0%) interval indicated precise methodology chosen. In the sample 3.6 per cent dwelling drink Spring Water and it can be confident (95%) that true percentage lies somewhere between 3.0 and 4.4 per cent if repeat sample many times (95 out of 100). The sample (3.6%) lies in the center with narrow interval (1.4%) Indicated precise methodology chosen. In the sample open well (2.0%), covered well (1.3%) and rivers are also sources of drinking water.

Table 12

Distribution of study households by health and hygiene status

Household liquid wastes	%	95% CI	N
Underground drains	9.6	[8.1-11.4]	2,765,568
Open drains	5.2	[4.0-6.6]	1,480,662
Soak pit	72.5	[67.6-76.9]	20,829,109
None	12.8	[10.0-16.2]	3,665,165
Total	100		28,740,504

Table 12 indicated that in NLSS IV sample survey only 9.6 per cent dwelling have underground drains and it can be confident (95%) that true percentage having drain lies somewhere between 8.1 per cent and 11.4 per cent if repeated sample many (95 out of 100) times. The sample (9.6%) lies in the center of range with narrow (3.3%) interval indicated precise methodology chosen while conducted NLSS IV survey. Similarly in the sample 5.2 per cent dwelling population have open drains and it can be confident (95%) that true percentage lies somewhere between 4.0 and 6.6 per cent if repeated sample many (95 out of 100) times from the same universe (Nepal). The sample (5.2%) lies in the center of range with narrow interval (2.6%) indicated precise methodology chosen while conducted NLSS IV sample survey. In the NLSS IV sample highest (72.5 %) number of household population have soak pit wastes management system and it can be confident (95%) that true percentage lies somewhere between 67.6 per cent and 76.3 per cent if repeated sample many (95 out of 100) times in Nepal. The sample lies in the center of range with wider (9.3%) indicated crude methodology chosen while conducted NLSS IV survey. In the sample (12.8 %) household population consists no liquid wastes management system and it can be confident that true percentage lies somewhere between 10.0 and 16.2 per cent if repeat sample many (95 out of 100) from the same universe (Nepal). The sample (12.8%) has twisted left side and with narrow (4.2%) interval indicated rough (error while conducted field operation) while methodology chosen.

Table 13

Distribution of study households by type of toilet facility

Type of toilet facility	%	95% CI	N
Household flush (connected to municipal sewer)	7.7	[6.3-9.4]	2219632
Household flush (connected to septic tank)	78.2	[76.1-80.2]	22475420
Household non-flush / latrine	8.2	[7.0-9.5]	2345934
Public toilet	0.3	[0.2-0.6]	99257
No toilet	5.6	[4.5-6.9]	1600261

Table 13 indicated that in NLSS IV sample, 78.2 per cent dwelling have septic tank flush toilet and it can be confident that true percentage (95%) lies somewhere between 76.1 and 80.2 percent if repeated sample (95 out of 100). The sample (78.2%) lies in the center of range with narrow interval (4.1%) indicated precise methodology chosen. Similarly only 7.7 per cent dwelling consisted flush toilet connected with municipal sewer in NLSS IV sample and it can be confident (95%) that true percentage lies somewhere between 6.3 per cent and 9.4 per cent

if repeated (95 out of 100) sample many times. In the NLSS IV sample 8.2 per cent dwelling consists non-flush toilet and it can be confident that true percentage (95%) lies somewhere between 7.0 per cent and 9.5 per cent if repeated sample (95 out of 100) many times. The sample lies in the center of range with narrow interval indicated precise methodology chosen. In the NLSS IV sample, 5.6 per cent dwelling have no toilet and it can be confident (95%) that true percentage lies 4.5 and 6.9 range with narrow (2.5%) range indicated precise methodology chosen. In NLSS IV sample 0.3 per cent dwelling used public toilet.

Basic problems and access to basic service

Table 14

Population with a non-communicable illness

Category	Percent	95% CI	N
NO	82.4	[81.8-82.9]	20895621
YES	17.6	[17.1-18.2]	4474712
Total	100.0		25370333

Table 14 indicated that only 17.6 per cent any household members have suffered from non-communicable illness. The sample (17.6%) lies in the center of range with narrow interval indicated precise methodology chosen while conducted survey. While adjusted this sample with population of Nepal; it comprises around 44,74,712 population according to population census 2021.

Social benefit and facilities

Table 15

Population by their view on government health facility

Category	Percent	95% CI	N
Bad	8.3	[7.5-9.0]	595332
Fair	68.8	[67.6-70.1]	4945546
Good	18.6	[17.5-19.6]	1334385
N/A	4.3	[3.8-4.9]	309839
Total	100.0		7185103

Table 15 indicated majority (68.8 %) view government provided health facilities was fair followed by good (18.6%) and bad (8.3%) respectively. For all these cases the sample lies in the center of range with narrow intervals indicated precise methodology chosen.

Table 16

Population by their view on government provided drinking water facility

Category	Percent	95% CI	N
Bad	9.3	[8.6-10.1]	670845
Fair	32.3	[31.0-33.5]	2318448
Good	18.9	[17.9-20.0]	1361448
N/A	39.4	[38.1-40.8]	2834362
Total	100.0		7185103

Table 16 indicated that more (32.3%) population said the government provided drinking water facility was fair followed by good (18.9%) and bad (9.3%) respectively. A large section of respondents (39.4%) were unaware about this. For all these cases the samples lies in the center of range with narrow intervals indicated precise methodology chosen while chosen survey methodology. The total adjusted population for this study represents 71,85,103 number in this sample.

Result and discussion

The “V shaped” curve was obtained while decreasing age from lower aged group to higher aged group. This indicated that mortality rate is increasing in Nepal while increasing age. The working population and aged people are dying with constant rate. Almost all population are dying around 60-70 years period. Some of the exceptional cases have been reported in Nepal like Shiva Puri Baba who survived 139 (self-claimed age) years who was born in 1823 in India and died on 1962 in Pashupati Dhurbashtali. Similarly Bir Narayan Chaudhary Majhi survived 141 years (self-claimed age) who was born on 1856 and died on 1998 (Associated Press News et al 1998). Human Development Report has considered average maximum survival age is 85 years and that of female 87.5 years. This also indicated that the health care of infant and children is good compared with working aged and adult population. The sex ratio for male is 47 and that of female is 53 which indicated that there existed heavy emigration of adult male in Nepal. The family composition for majority of households (51%) seemed more than 5 member and which is assets to build Nepal. The hill caste, Janjati Madhesh/Tarai three groups were major population categories in Nepal. To get married is universal phenomena in Nepal and in our data only 32 per cent population are never married. The highest percentage of sample population are residing in Madhesh and Bagmati and least numbered resided in Karnali. This indicated that population showing urban residing tendencies. About one quarter of population are still illiterate and 35 per cent population has passed SLC/SEE level of education which is great achievement in Nepal. Currently about 20 per cent population were under study in SLC and above education which was also great achievement for Nepal. About half population were drinking safe water and still half were drinking unsafe water which was major barrier to progress and change in Nepal. The hand pump water may contained Arsenic element which is danger for human health because it creates Cancer disease for human and animals.

Similarly still few households were drinking river and spring water which was also danger for human health. About 5 per cent population drinking Jar and bottled water which was considered as safe. The data indicated that only 9.6 per cent households consists underground drain which was very poor condition for human health. The majority of households have Soak pit type toilet which consists man hole in their home area. In Nepal 5.6 per cent households have no any type of toilet still now and while taking 95 per cent confidence interval it lies 4.5 to 6.9 per cent in another sample if we repeat another sample. Similarly in Nepal 12.8 per cent households have not any type of drainage system and while taking 95 per cent confidence interval it lies 10.0 to 16.2 per cent if we repeat several samples from the same population. Similarly also in Nepal only 7.7 (the range of 95 per cent confidence interval lies 6.3 to 9.4 per cent) per cent households consist flush sewerage management system connected with municipal sewer which was very poor indicator of development and change process. Most of households (78.2%) consists septic tank connected flush system which was considered as good for health and hygiene. While analyzing view only some (18.6%) population said that the governmental facility was good and few (8.3) per cent said it was bad. More (18.9%) population said that the government provided drinking water facility was good and some (9.3%) said that was bad. Those above mentioned data indicated Nepal is still facing lack of basic development facilities.

References

- Central Bureau of Statistics. (1996). *Nepal living standards survey report 1996: Main findings* (Vol. 1). National Planning Commission Secretariat, Government of Nepal.
<https://microdata.worldbank.org/index.php/catalog/2301>
- Central Bureau of Statistics. (2004). *Nepal living standards survey 2003/04: Statistical report* (Vols. 1–2). National Planning Commission Secretariat, Government of Nepal.
<https://microdata.nsonepal.gov.np/index.php/catalog/9>

- Central Bureau of Statistics. (2011). *Nepal living standards survey 2010/11: Statistical report* (Vols. 1–2). National Planning Commission Secretariat, Government of Nepal.
<https://microdata.nsonepal.gov.np/index.php/catalog/37>
- Ember, C. R., Ember, M., & Peregrine, P. N. (2018). *Anthropology* (15th ed.). Pearson.
- National Statistics Office. (2024). *Nepal living standards survey IV (2022/23): Statistical report*. Office of the Prime Minister and Council of Ministers, Government of Nepal.
<https://nsonepal.gov.np/>
- National Statistics Office. (2024). *Nepal living standards survey IV 2022/23: Summary report*. Government of Nepal, Office of the Prime Minister and Council of Ministers.
<https://ludwig.guru/s/if+available>
- UNDP (1998). *Human Development Report 1998*. New York. Oxford University Press. Pp. 107-110.
- UNDP (1999). *Human Development Report 1999*. New York. Oxford University Press. Pp. 159-163.