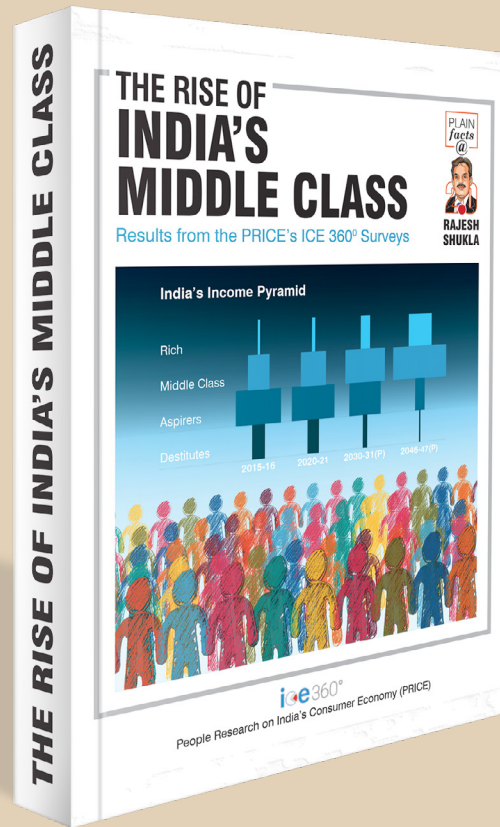




TECHNICAL NOTE –

METHODOLOGY, VALIDATION AND ESTIMATION

ANNEXURE 1:

TECHNICAL NOTE ON PRICE'S ICE 360° SURVEYS

PRICE's ICE 360° surveys (2014, 2016 and 2021) called as “**Household Survey of India's Consumer Economy and Consumer Environment**” aimed to generate integrated longitudinal data (Interconnected, consistent and up to date) to provide a 360° view of “household's & people's” progress on financial conditions (income, expenditure, saving and borrowings), living conditions, access to public goods, amenities, state welfare, health, education, occupational conditions, social and occupational mobility and inclusion in the consumer market economy¹.

In recent times, it has been the only regular source of data on income, expenditure and saving in India. And among household surveys of its kind across the world, ICE 360° surveys hold a unique position on account of scientific and robust measurement of income, its massive sample size, range, and the depth of information it uncovers. Over the years, the survey has become the most credible source of information on Indian consumer market structures for decision makers in top marketing concerns, in public enterprises and Indian household economy in government.

Collecting data on income is an arduous and expensive task, complicated by the high propensity for intentional or unintentional respondents' biases. While several surveys report income as claimed by respondents, PRICE has chosen a methodology which is more rigorous though more difficult to implement, using the Canberra City Group guidelines for income estimation. Canberra City Group Report has suggested a conceptual framework for income distribution analysis based on reconciliation of micro and macro approaches. It has identified a set of over hundred components of income to obtain reliable estimates for total income, of which 36 are considered essential. ICE 360° surveys

considered about over 50 components of income to provide reliable estimates of total disposable household income. The major components of income covered in the surveys are income from regular salary/wages, income from self-employment in non-agriculture, income from wages (agricultural labour and casual labour), income from self-employment in agriculture (crop production, forestry, livestock, fisheries, etc), income from other sources such as rent (from leased out land and from providing accommodation and capital formation), interest dividends received, employer-based pensions. In addition, when paid in kind (example in grain), the value of that is also considered as income.

Main Features of ICE 360° survey

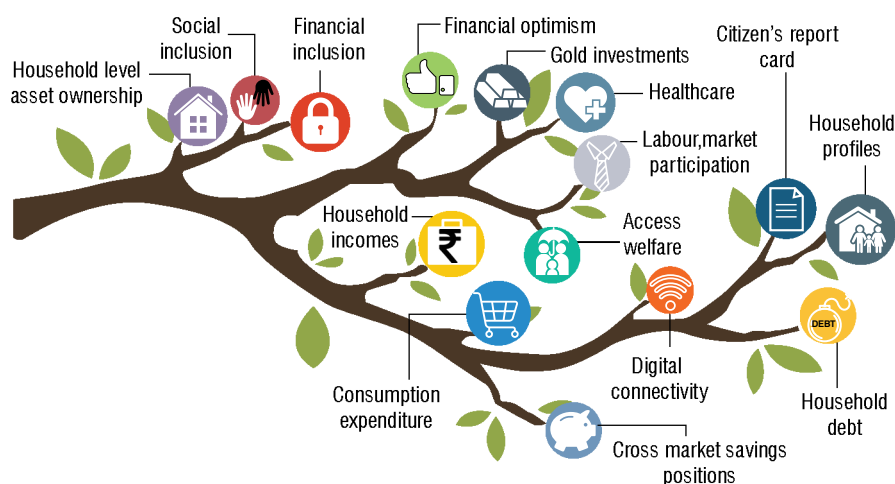
- Best mix of **Baseline-Panel-Longitudinal-Cross-sectional**
- Using **stratification and probability sampling** to generate representative samples

- **Sample size** is determined based on the accuracy required and the resources available
- **Standard survey principles and procedures** such as a good survey design, well-designed survey instruments, using reliable sample frame, proper implementation field work, robust data cleaning and analysis will be undertaken to minimize sampling and non-sampling errors.
- **Non-response** is controlled by conducting focus group, proper training of interviewers and supervision.
- Components of income, expenditure and saving are collected from **head (accrue to the household as a unit) and individuals (accrue to individuals)**
- In addition to household data, **data on demographic profile of all household members** are collected.

Coverage of the Study

The target population of the survey was the total population in the country, with states and urban/rural categories as sub-populations or target groups. However, the survey was undertaken in 23 major States/Union Territories of India covering both rural and urban areas of Andhra Pradesh, Assam, Bihar, Chandigarh, Chhattisgarh, Delhi, Gujarat, Haryana, Himachal Pradesh, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Megha-

FIGURE 1:
THEMATIC RESEARCH AREAS COVERED IN ICE 360° SURVEY



¹ Shukla, Rajesh (2010a). “The Official Poor in India Summed Up”, Indian Journal of Human Development, Vol. 4, No. 2, pp. 301-28.

Shukla, Rajesh (2010b). “How India Earns, Spends and Saves”, Sage Publications, New Delhi.

TABLE 1:
ICE 360° SURVEY - FEATURES

Feature	ICE 360° survey (2014)	ICE 360° survey (2016)	ICE 360° survey (2021)
Survey type	Cross section	Best mix of Baseline-Panel-Longitudinal - Cross-sectional	
Sample design	Probability sample	Probability sample	Probability sample
Coverage (Rural & Urban)	21 states & UTs (Rural & Urban)	25 states & UTs (Rural & Urban)	23 states & UTs
Sampling frame	100,000 households	300,000 households	200,000 households
Sample size	20,000 households	61,000 households	40,000 households
Method of data collection	Face-to-face interview	Face-to-face interview	Face-to-face interview - CAPI
Respondents	CWE & Housewife	CWE & Housewife	CWE & Housewife
Reference period	Financial Year - 2014	Financial Year - 2016	Financial year - 2021

laya, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttaranchal, Uttar Pradesh, and West Bengal. The remaining States and Union Territories which were excluded are excluded mainly due to operational difficulty. However, these areas account for nearly 3 to 4 per cent only towards country's total population.

Survey Approach and Methodology

The main objective of this exercise is to undertake a detailed national household survey among the rural and urban households across the country to generate reliable estimates of household well-being (such as income, expenditure, savings and related indicators) for all major states and for major town categories. Household is the target unit of the study, with states and urban/rural categories as sub-populations or target groups, for whom representative estimates will be sought. The geographical coverage of the survey includes the entire country comprising of major states and UTs. The survey methodology and sampling design adopted is kept broadly like the last round, which was drawn after reviewing best international practices and worked very well.

Survey procedures such as approach, concepts and definitions, sample design and sample size, content of the question-

naire and estimation procedure were executed after reviewing best national and international practices² to fill the data gap on household income. Broadly same approach and survey methodology have been adopted in all three rounds of ICE 360° surveys with further value addition through introduction of new issues/targets and building competitive advantage such as classifying "Something" known but "puzzling".

A **three-stage stratified random sample design** has been adopted for the present survey in which a ready-made frame is used for the first two stages and a sampling frame is developed in the last stage. Districts, villages and households form the first, second and third stages of sampling, respectively for selection of the rural sample while cities/towns, urban blocks and households are the three stages of selection for the urban sample. Sampling for rural as well as urban areas is done independently within each state/UTs. Following the basics of sample survey principle that geographical spread is more important than the sample size, both rural and urban sample is selected from a wide cross-section of the country. The rural sample has been selected from a representative number of districts from across the country, while the urban sample covers a range from big metropolitan cities to small towns with popu-

lation below 5,000. The sample sizes at first, second and third stages in rural and urban areas are determined based on available resources and the derived level of precision for key estimates from the survey, taking into account the experience in conducting the earlier round of ICE 360° survey.

Sampling Frame: The list of 2011 census districts and villages constitute the sampling frame for rural and list of 2011 census cities/towns for urban. In the absence of the definitive list of households (sampling frame), specially designed listing Performa will be used to list households in the selected villages and urban blocks to collect information on various auxiliary variables. In the case of large villages/urban blocks, a fraction of households will be listed based on sampling fraction.

Selection of Rural Sample: In rural, a sample of 105 districts was allocated to the 23 covered states/UTs. Districts were selected, as the first stage sample units, with probability proportional to size and replacement, where rural population of each district as per Census 2011 was used as size measure. Villages formed the second stage of selection procedure. A total sample of 722 villages (second-stage sampling units) was allocated to the selected 105 districts, approximately in proportion to rural population of each selected district. The allocated number of sample villages was chosen with equal probability sampling approach.

In each of the selected villages, approximately 100 households were selected following equal probability sampling approach for listing purpose and preliminary survey. Besides others, the listing schedule collected information on household's particulars such as occupation of chief wage earner (CWE), total household income, expenditure, agricultural land, education, occupation, financial inclusion, and wellbeing. A total of 201,900 households were listed comprising 77,699 households from entire rural India.

A well-being score of each listed households are calculated using information such as household income, expenditure, land possessed, ownership

² The major sources reviewed includes Situation Assessment Survey of Farmers (NSSO); Integrated Household Survey (NSSO); Employment and Unemployment Survey (NSS); All India Rural Household: Survey on Saving, Income and Investment (NCAER 1962); Survey on Urban Income and Saving (NCAER 1962); Market Information Survey of Households (1985-2001, NCAER); Micro-Impact of Macro and Adjustment Policies (MIMAP, NCAER); Rural Economic and Demographic Survey (NCAER); Expert Group on Household Income Statistics, Canberra Manual; Household Income and Expenditure Statistics (ILO); Chinese Household Income Project (1995) and Household Income and Expenditure Survey (Sri Lanka), etc.

of consumer goods, highest education in the households, etc., collected during the listing process. All the listed households were stratified based on wellbeing score generated for each household separately and major source of household income into 10 strata (Table 2).

From each of the ten strata, two households were selected by following equal probability sampling approach. In case, any of the strata was found to be missing (no household), then households from previous stratum, where additional households were available, were selected to get 20 sample households in a sample village.

Following the above sampling design in rural areas, in the last round (ICE 360° survey, 2021), the realised sample of 14,704 households out of preliminary listed sample of 77,699 households was spread over 722 villages in 105 districts covering the 23 States/UTs.

Selection of Urban Sample: In the urban, within the 25 covered States/UTs, were again treated as the main strata and a sample of 121 towns (first stage units) were selected covering all sample states. All the cities/towns of having population over a million were selected with a probability one. A progressively increasing sampling fraction with increasing town population class was used for de-termining the number of towns to be selected from remaining towns.

A total sample size of 1,222 urban wards was allocated among the sample towns in proportion to the number of wards in the respective towns, maintaining an equal number of wards allocated to each selected town in a town group.

The allocated number of wards was selected from each sample town, following equal probability sampling ap-

TABLE 2:
STRATIFICATION OF RURAL HOUSEHOLDS

Major source of household income	Household well-being score			
	0-0.25	0.25-0.50	0.50-0.75	>0.75
Self-employment in agriculture	Stratum-I	Stratum-II	Stratum-III	Stratum-IV
Labour (agriculture/other casual)	Stratum-V			
Self-employment in non-agriculture	Stratum-VI		Stratum-VII	
Regular salary/wages	Stratum-VIII		Stratum-IX	
Others (Remittances/Pension etc)	Stratum-X			

TABLE 3:
STRATIFICATION OF URBAN HOUSEHOLDS

Major source of household income	Household well-being score			
	0-0.25	0.25-0.50	0.50-0.75	>0.75
Regular salary/wages	Stratum-I	Stratum-II	Stratum-III	Stratum-IV
Self-employment in non-agriculture	Stratum-V		Stratum-VI	Stratum-VII
Casual labour	Stratum-VIII		Stratum-IX	
Others (Remittances/Pension etc)	Stratum-X			

proach. Thus, towns and wards formed the first and second-stage sample units in the urban sample design.

Like in the rural sample design, within a selected ward, a sample of about 100-123 households were selected for listing and preliminary survey, following equal probability sampling approach. In the last round (ICE 360° survey, 2021), a total of 124,201 households formed the sampling frame for urban India. A well-being score of each listed households are calculated using information such as household income, expenditure, ownership of consumer goods, highest education in the households, etc. collected during the listing process. All the listed households were stratified based on wellbeing score generated for each household separately

and major source of household income into 10 strata (Table 3).

From each of the above strata, 2 households were selected at random with equal probability of selection. If there was no household in any of the strata, the shortfall was compensated from the previous stratum, where additional households were available, to get 20 sample households from each sample urban blocks in urban sector for detailed survey.

Following the above sampling design in urban areas, the realised sample of 25,723 households, out of preliminary listed sample of 124,201 households, was spread over 1,222 urban wards in 121 towns covering the 23 States/UTs. State-wise allocation of sample is given in Table 4. ●

TABLE 4:
STATE-WISE ALLOCATION OF SAMPLE (ICE 360° SURVEY, 2021)

Sl.No.	State	Rural sample				Urban sample				All India sample			
		No. of sample districts	No. of sample villages	Households (Listing)	Households (Main)	No. of sample Towns/Cities	No. of sample urban blocks	Households (Listing)	Households (Main)	No. of sample Districts/Towns/Cities	No. of sample villages/urban blocks	Households (Listing)	Households (Main)
1	Andhra Pradesh	4	40	4,909	808	5	26	3,078	536	9	66	7,987	1,344
2	Karnataka	6	50	6,183	1,029	7	67	8,093	1,443	13	117	14,276	2,472
3	Kerala	5	32	3,982	643	3	45	5,534	908	8	77	9,516	1,551
4	Tamil Nadu	7	50	4,935	986	14	139	14,888	2,813	21	189	19,823	3,799
5	Telangana	4	38	4,768	832	5	52	6,016	1,072	9	90	10,784	1,904
South		26	210	24,777	4,298	34	329	37,609	6,772	60	539	62,386	11,070
6	Chandigarh	1	5	535	102	1	10	1,050	199	2	15	1,585	301
7	Delhi	-	-	-	-	1	60	6,080	1,227	1	60	6,080	1,227
8	Haryana	5	24	2,382	501	7	47	4,799	968	12	71	7,181	1,469
9	Himachal Pradesh	4	18	1,660	383	2	8	813	191	6	26	2,473	574
10	Punjab	5	30	3,011	654	8	67	6,956	1,455	13	97	9,967	2,109
11	Rajasthan	6	37	4,052	729	5	37	4,153	752	11	74	8,205	1,481
North		21	114	11,640	2,369	24	229	23,851	4,792	45	343	35,491	7,161
12	Assam	5	24	2,441	443	3	17	1,789	315	8	41	4,230	758
13	Bihar	6	44	5,589	900	6	39	5,540	830	12	83	11,129	1,730
14	Jharkhand	5	32	3,527	586	2	20	2,429	464	7	52	5,956	1,050
15	Odisha	5	38	3,781	766	5	31	3,123	634	10	69	6,904	1,400
16	West Bengal	2	18	3,346	380	8	123	13,447	3,414	10	141	16,793	3,794
East and North-East		23	156	18,684	3,075	24	230	26,328	5,657	47	386	45,012	8,732
17	Daman & Diu	1	8	831	147	1	4	411	78	2	12	1,242	225
18	Gujarat	6	46	4,620	957	7	65	6,757	1,360	13	111	11,377	2,317
19	Maharashtra	5	41	5,250	789	9	181	19,216	3,279	14	222	24,466	4,068
West		12	95	10,701	1,893	17	250	26,384	4,717	29	345	37,085	6,610
20	Chhattisgarh	4	25	3,118	517	4	24	2,922	551	8	49	6,040	1,068
21	Madhya Pradesh	7	33	4,435	660	5	48	4,973	896	12	81	9,408	1,556
22	Uttar Pradesh	10	83	8,491	1,762	11	96	10,016	2,031	21	179	18,507	3,793
23	Uttarakhand	2	6	988	130	2	16	2,213	307	4	22	3,201	437
Central		23	147	17,032	3,069	22	184	20,124	3,785	45	331	37,156	6,854
Total		105	722	82,834	14,704	121	1,222	134,296	25,723	226	1,944	217,130	40,427

Source: ICE 360° Survey (2021), PRICE

ANNEXURE 2:

DATA VALIDATION AND RELIABILITY OF ESTIMATES

Income and expenditure surveys often tend to bring to fore certain stark trends and statistics. And invariably doubts are raised over the reliability of such data. It should be admitted that there is no fool proof method by which one can establish the reliability of all the survey results. There are, however, certain procedures by which it is possible to make assessment of the degree of confidence that can be placed on the findings of the survey. The most widely used and fruitful procedure is to compare the survey estimates with the estimates generated by other reliable sources despite the difficulty to obtain estimates which are comparable from the point of view of concepts, coverage of population and period to which data refer. However, such comparison provides some basis for judging the degree of reliability and hence an attempt is made to compare the survey results with the available external data.

Demographic characteristics: Information relating to key demographic

characteristics of the Indian households is available from various rounds of National Sample Surveys and Census 2011, with which the present survey (ICE 360° Survey, 2021) results can be compared. According to the ICE 360° Survey, there are 307.6 million households in the country, of which 36.3 per cent (111.8 million) live in urban areas and the rest (195.8 million) in rural areas (Table 5). Estimate of average household size from ICE 360° Survey, 2021 (4.60 members) appears consistent with the estimates obtained from NSS 68th round, 2011-12 (4.40 members) and Census 2011 (4.90 members).

All the three data sources are also comparable on some other parameters, such as the distribution of households by religious groups. It is to be noted that the share of households across different religious groups in rural India as observed in ICE 360° Survey, 2021 appears to be very similar to those obtained from NSS, 2014 (Education Survey) and Census, 2011 estimates.

However, in case of urban India, ICE 360° Survey has covered a slightly higher share of Hindus relative to other religions (Table 6).

Sources of Household Income: In case of urban India, while NSSO 68th round reported a considerably higher share of salaried (41.5 per cent) as compared to labourers including other sources (24 per cent), ICE 360° Survey (2021) observed 37 per cent of shares of salaried households and significantly higher share of labourers including other sources, 45 per cent, as the principal sources of income. Share of urban households who are self-employed in non-agriculture activities are not very different across these two sources, although NSS reported a slightly higher share in 2011-12. In rural India, ICE 360° Survey has captured relatively lower shares of self-employed households as compared to NSS (Figures 2 & 3). However, share of casual labour households covered is similar in both the surveys.

The size of cultivable land owned by a household is an important indicator of the economic status of the household which is certainly more relevant in the context of rural areas as compared to urban. As per ICE 360° Survey 2021, while nearly 68 per cent of rural households in India do not possess any cultivable land, another 12 per cent are marginal farmers (0-1 hectare of land). Since share of landless households have increased over the years, we can see the proportional adjustment in distribution of households across the other land categories between 2011-12 and 2020-21 (Figure 4). month period, April 2020- March 2021. An estimate of surplus income (as an indicator of savings) is arrived at by subtracting the total household routine expenditure from the total household income. Through this method, this survey found estimates of savings as a proportion of disposable income to be 20.6 per cent.

Ownership of Basic Amenities: At all India level, the proportion of households owning different types of basic amenities such as electricity, tap water, toilet and LPG/PNG has improved significantly between 2011 and 2021. In almost all the categories the ownership increased in the range of 20 to 30 percentage points at all India level. Among these four amenities, improvement in ownership between 2011 and 2021 has been relatively lower in case of access

TABLE 5:
ESTIMATES OF HOUSEHOLDS, POPULATION, AND HOUSEHOLD SIZE

	Census, 2011	NSS, 2011-12	ICE 360° Survey, 2014	ICE 360° Survey, 2016	ICE 360° Survey, 2021
Rural					
Estimated households (Million)	168.6	172.1	179.5	184.3	195.8
Estimated population (Million)	833.7	792.1	845.0	889.5	918.2
Household size	4.94	4.60	4.71	4.83	4.69
Urban					
Estimated households (Million)	80.9	78.2	90.6	96.2	111.8
Estimated population (Million)	377.1	316.9	419.9	440.3	497.8
Household size	4.66	4.05	4.63	4.58	4.45
All India					
Estimated households (Million)	249.5	250.3	270.1	280.6	307.6
Estimated population (Million)	1210.8	1109.0	1264.9	1329.8	1416.1
Household size	4.85	4.43	4.68	4.74	4.60

of tap water and toilet. Again, improvement in ownership of these amenities is higher in rural India as compared to urban, except for tap water where progress is almost similar in rural and urban areas (Figures 5 to 7).

Estimates of Income, Expenditure and Saving: An average household in India had an annual income of 471,185 in 2020-21, and an expenditure of 374,003, leaving it with a surplus of 97,183 to save and invest. Urban income levels are around 610,690 per annum versus 391,538 per annum for rural. Since expenses in urban areas are substantially higher (466,309 per annum in urban areas versus 321,302 per annum in rural ones), the differences in the surplus income (of urban and rural areas) that can be saved or invested is not all that huge. As a result, the average urban household saves nearly 2 times that of a rural household (144,381 per annum in urban areas versus 70,236 for rural areas).

Extent of income captured by ICE 360° survey: A common problem faced by such surveys is the under-statement of economic data (income, expenditure, and savings) by the respondents. Based on the adopted concept of income in ICE 360 surveys (which includes wages, salaries, bonus, business, profession, farm income and other forms of labour income, pensions, rent, interest, and dividend), the ICE360° survey 2021 estimates of the aggregate income of Indian households are about 60.3 per cent of the total personal disposable income, as provided by the National Accounts Statistics (NAS) for entire country.

These differences in estimates can be attributed to the following factors. **One**, this survey did not cover some of the smaller states and union territories which account for about 4 per cent of the population. **Two**, according to the National Statistical Organisation (NSO), the household sector comprises of individuals, non-government non-corporate enterprises of farm business and non-farm business like sole proprietorships and partnerships, and non-profit institutions. This survey, on the other hand, covers only households. **Three**, certain components of income are not perceived as income by the respondents and hence they get excluded from incomes reported in income surveys. Items like reimbursements for travel, medical and other such expenses are not report-

TABLE 6:
DISTRIBUTION OF HOUSEHOLDS (%) BY RELIGION

	Census, 2011	NSS, 2011	ICE 360° Survey, 2016	ICE 360° Survey, 2021
Rural				
Hindu	83.3	83.5	86.7	91.6
Muslim	11.2	11.6	9.6	5.4
Sikh	1.7	1.8	1.9	1.2
Christian	2.2	2.2	1.2	0.5
Others	1.6	0.9	0.5	1.3
Total	100.0	100.0	100.0	100.0
Urban				
Hindu	77.6	79.7	84.4	84.7
Muslim	15.4	14.3	11.3	11.7
Sikh	1.5	1.4	1.6	1.0
Christian	3.4	3.0	1.6	1.5
Others	2.1	1.6	1.1	1.1
Total	100.0	100.0	100.0	100.0
All India				
Hindu	81.5	82.3	85.9	89.1
Muslim	12.6	12.5	10.2	7.7
Sikh	1.7	1.7	1.8	1.1
Christian	2.5	2.5	1.4	0.9
Others	1.8	1.1	0.7	1.1
Total	100.0	100.0	100.0	100.0

TABLE 7:
ESTIMATES OF STANDARD ERRORS (2020-21)

Per capita income quintile	% Share in households	% Share in total income	Per capita income (Rs. Per annum)	Standard error of mean income (%)	Coefficient of variation (%)
Q1-Bottom quintile (0-20%)	16	3	16,967	0.8	56
Q2-Second quintile (21-40%)	19	7	37,018	1.1	47
Q3-Middle quintile (41-60%)	19	12	63,265	1.7	44
Q4-Fourth quintile (61-80%)	21	21	1,08,778	2.7	44
Q5-Top quintile (81-100%)	25	56	2,85,653	8.4	70
Total	100	100	1,02,339	3.0	82

ed correctly in this survey.

Estimates of Sampling Error: To check the data reliability, a variety of methods are used. The most common amongst them are evaluation of sampling and non-sampling errors. Sampling errors are measurable within the

framework of the sample design and are also controllable by varying the size of the sample. For instance, the average per capita income per household is 102,339 and its standard error is 3 per cent (Table 7). The standard error and coefficient of variation of the estimated

per capita household income for various income quintiles is consistent and within permissible limits. This generates a fair degree of confidence in the ICE 360° survey estimates.

Another important source of error, which can vitiate the estimates, is the **non-response rate**. In the case of this survey, it was around 3 per cent and largely due to unanticipated reasons such as the psychology of the respondent. Non-sampling errors arise mainly from three sources. **One**, respondents refuse to cooperate and deny information; they supply partial information that may not be usable; or they deliberately provide false information. **Two**, the interviewers are also prone to have some preconceived notions whereby some biases creep into the schedules. **Three**, respondents may not remember all the relevant numbers sought by the interviewers. And this tends to considerably increase the margin of error in the data collected. There is no satisfactory procedure for a precise measurement of non-sampling errors. A team of trained interviews (180), supervisors (30) and PRICE professionals (10) from different language groups were engaged for about three months to undertake the task of primary data collection. The field team was thoroughly trained through all the phases of the surveys. Every care was taken to implement maximum possible quality control in recording of the answers of the respondents. ●

CHART 2:
DISTRIBUTION OF URBAN HOUSEHOLDS BY SOURCE OF INCOME

(Per cent of household)

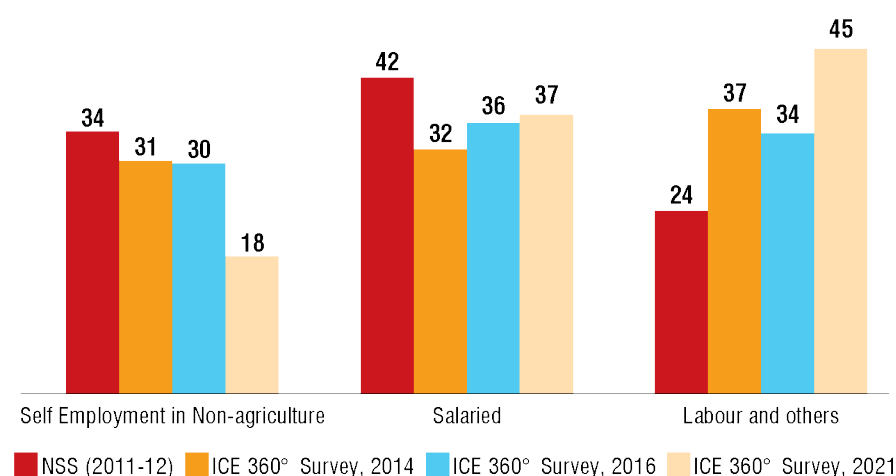


CHART 3:
DISTRIBUTION OF RURAL HOUSEHOLDS BY SOURCE OF INCOME

(Per cent of household)

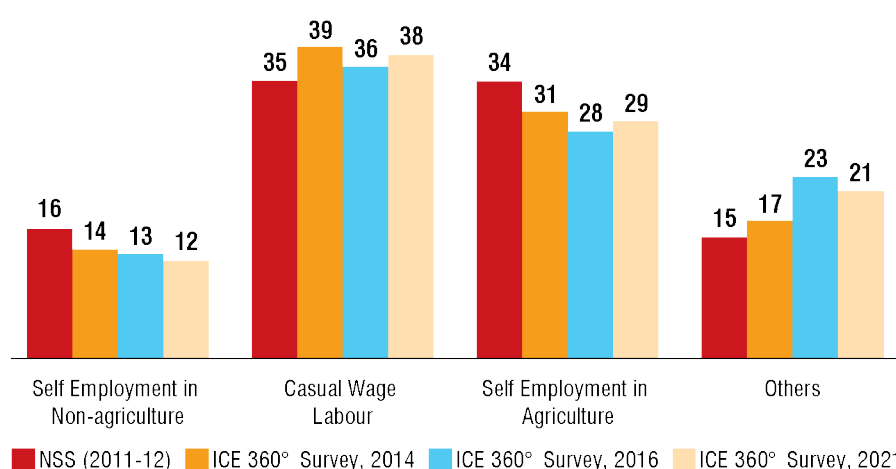
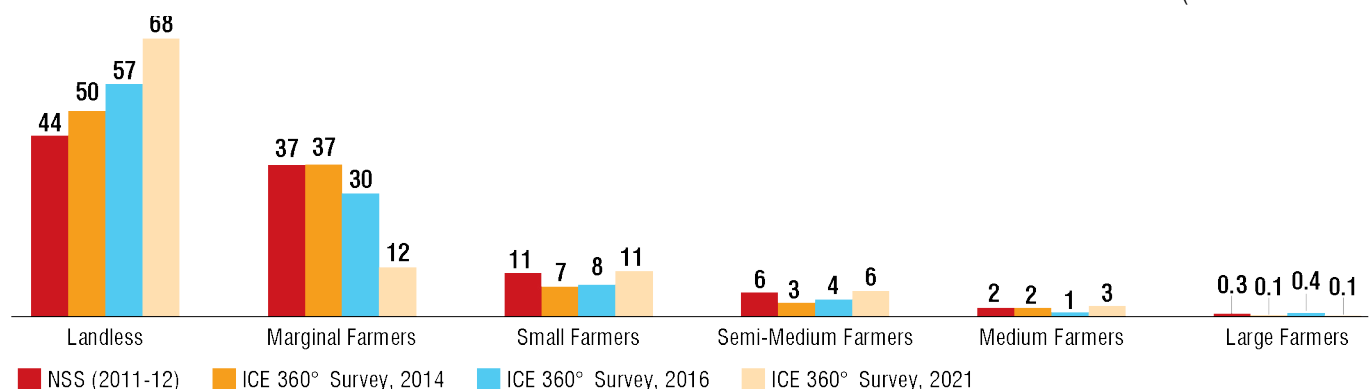


CHART 4:
DISTRIBUTION OF RURAL HOUSEHOLDS BY CULTIVABLE LAND CATEGORY³

(Per cent of household)



³ Landless: 0 hectares; Marginal farmers: 0-1 hectares; Small farmers: 1-2 hectares; Semi-medium farmers: 2-4 hectares; Medium farmers: 4-10 hectares; Large farmers: more than 10 hectares

CHART 5:
ACCESS OF BASIC AMENITIES – ALL INDIA

(Per cent of households access)

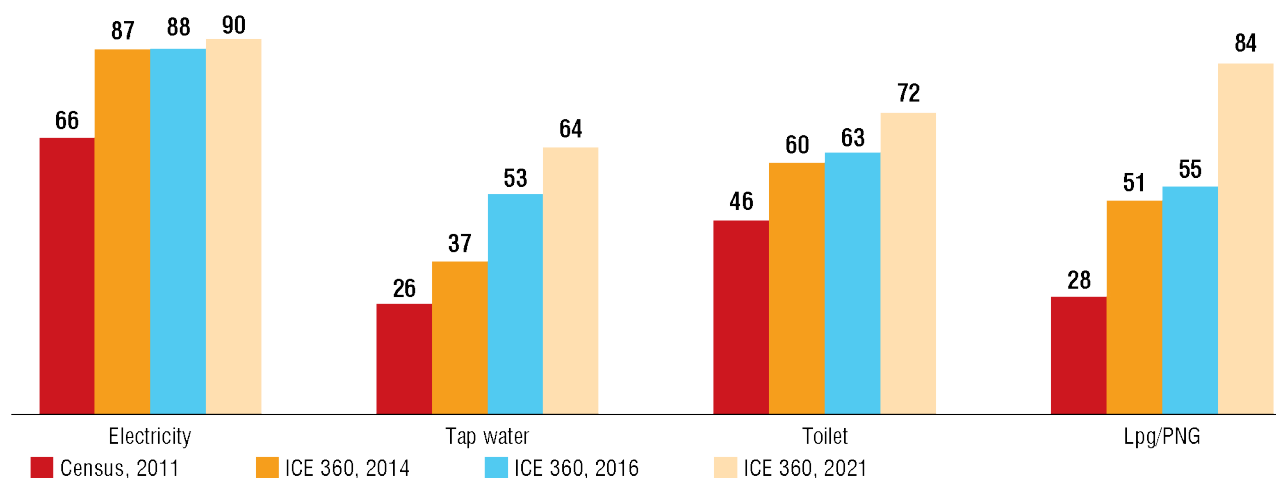


CHART 6:
ACCESS OF BASIC AMENITIES – RURAL

(Per cent of households access)

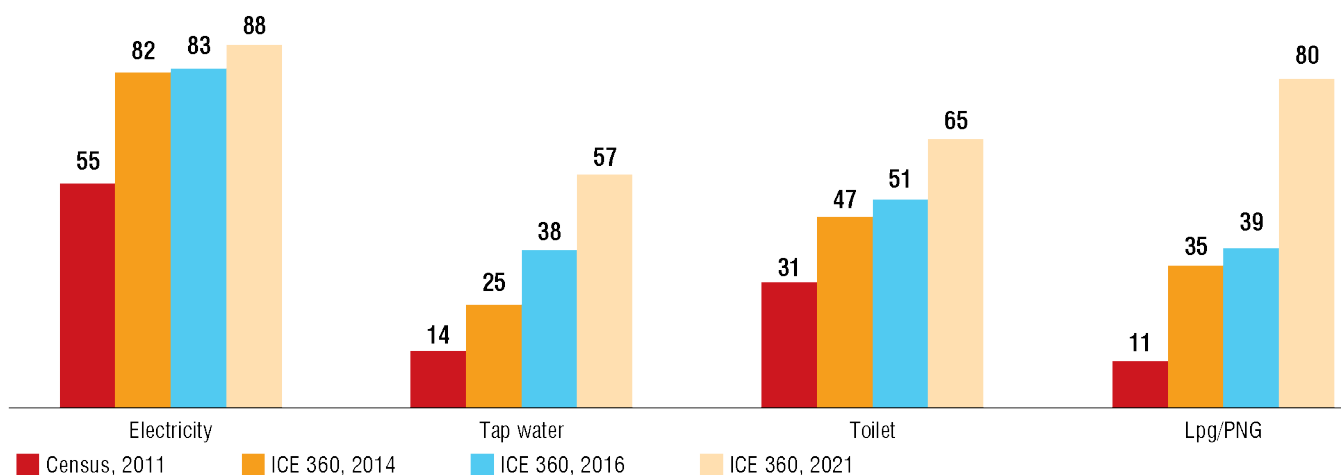
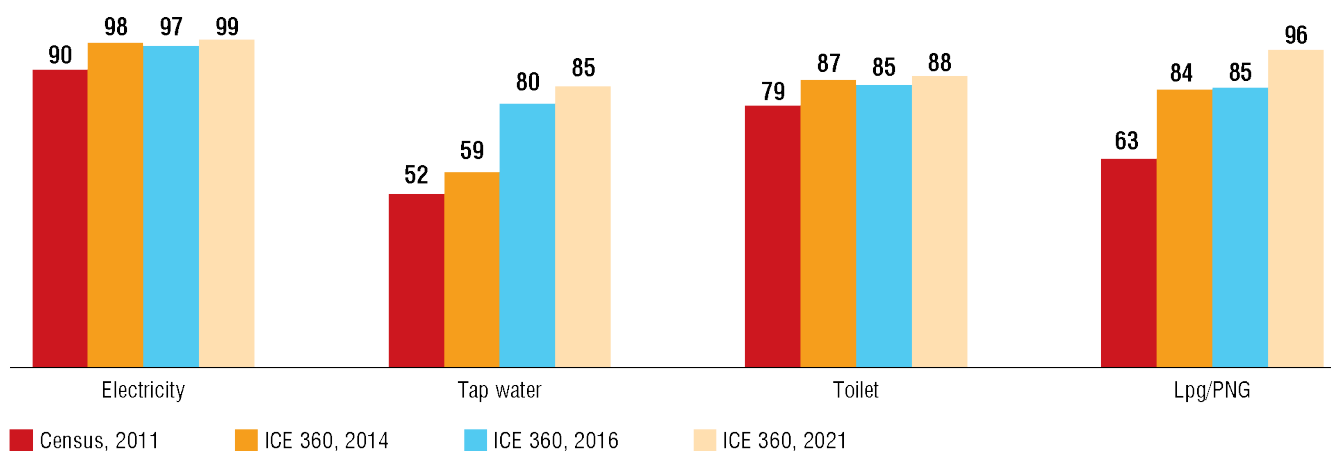


CHART 7:
ACCESS OF BASIC AMENITIES – URBAN

(Per cent of households access)



ANNEXURE 3: CONCEPTS AND DEFINITIONS

• A **household** is the basic unit of analysis in the study. Most of the quantitative classificatory factors such as income, expenditure, investment, surplus income, amount of life insurance payments, etc., refer to the household. Certain other characteristics used for the analysis such as occupation, age, education, and source of income refer, however, pertain only to the chief earner of the household.

• **Household:** A group of persons normally living together and taking food from a common kitchen constitutes a household. The members of a household may or may not be related by blood or marriage. Servants, permanent labourers and unrelated members are treated as members of the household in case they take their meals regularly from the same kitchen. If a person was out for more than six months during the reference period, he/she was not treated as a member of the household. Those entering the household on account of marriage or other alliances and newborn babies are counted as members of the household, even if they lived with the household for less than six months.

In ICE 360^o surveys, household has been considered as the basic unit of primary data collection as well statistical analysis.

• **Household size:** The number of resident members of a household is its size. It includes temporary stay-away members but excludes temporary visitors and guests.

• **Head/Chief Wage Earner of the household:** The head is the main decision-maker in the family and the person best informed about the family's finances. Usually, he/she is the chief earner or the oldest member in the household. The household members were expected to inform the interviewer who they regard as their 'head/chief earner'.

• **Zonal Councils of India:** India is composed of 28 states and eight union territories (including a national capital territory). The states of India have

been grouped into six zones having an Advisory Council "to develop the habit of cooperative working" among these States. The present composition of each of these Zonal Councils is as follows.

o **Northern Zonal Council**, comprising Chandigarh, Delhi, Haryana, Himachal Pradesh, Jammu and Kashmir, Ladakh, Punjab, and Rajasthan.

o **North-Eastern Council**, comprising Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, and Sikkim.

o **Central Zonal Council**, comprising the States of Chhattisgarh, Madhya Pradesh, Uttarakhand, and Uttar Pradesh.

o **Eastern Zonal Council**, comprising Bihar, Jharkhand, Odisha, and West Bengal; Western Zonal Council, comprising Dadra and Nagar Haveli and Daman and Diu, Goa, Gujarat, and Maharashtra.

o **Southern Zonal Council**, comprising Andhra Pradesh, Karnataka, Kerala, Puducherry, Tamil Nadu, and Telangana, Andaman and Nicobar Islands, and Lakshadweep.

• **Rural and urban areas:** The definition of urban and rural areas adopted for this study is the same as that used in the 2011 Census. As per Census 2011, constituents of urban areas are **Statutory Towns, Census Towns and Outgrowths**.

Statutory Towns (ST): All places with a municipality/corporation, cantonment board or a notified town area committee, etc.

Census Towns (CT): Places that satisfy the following criteria termed as CTs.

- A minimum population of 5,000
- At least 75% of the male main working population engaged in non-agricultural pursuits
- A density of population density of at least 400 per sq. km.

• **Outgrowth (OG):** Outgrowth should be a viable unit such as a village or part

of a village contiguous to a statutory town and possess the urban features in terms of infrastructure and amenities such as pucca roads, electricity, taps, drainage system, education institutions, post offices, medical facilities, banks, etc. Examples of OGs are Railway colonies, university campuses, port areas, that may come near a city or statutory towns outside its statutory limits but within the revenue limit of a village or villages contiguous to the town or city.

• **Urban Agglomeration (UA):** It is a continuous urban spread constituting a town and its adjoining urban out-growths (OGs) or two or more physically contiguous towns together and any adjoining urban out-growths of such towns.

• **RURAL:** All area other than urban are rural. The basic unit for rural areas is the revenue villages.

• **Geographical clusters:** To take a finer-grained look at the geography of inequality after considering differences across seven types of clusters that lie along a continuum ranging from metro cities to the most remote rural areas.

In the case of urban India, a combination of three different criteria helped identify the first three (of four) categories of districts - "Metros", "Boom Towns" and "Niche Cities". The three criteria we employ are population, rate of urbanization and per capita household consumption. As a base for selecting the first three urban clusters we have considered all cities having population of one million and above in 2021. Once the first three clusters have been defined, the fourth urban cluster has been defined as the rest of urban India and has been called as "Rest of urban".

o **Nine 'Metros'** – Mumbai, Delhi, Kolkata, Bangalore, Chennai, Hyderabad, Surat, Ahmadabad and Pune- garner the lion's share of attention as India's consumption centres. These are the country's largest population centres (all have population above five million), and for the most part they are the largest markets in terms of household disposable income and total consumption expenditure.

o **Sixteen 'Boom Towns'** stand out because of their potential to be the next set of large population cities are emerging cities that are quickly moving up the ranks as the largest markets (all have population

between 2.5- 5 million) following the 'Metros'. This group of cities has younger populations and has posted the fastest growth in disposable income. Cities in this group include Kozhikode, Coimbatore, Kochi, Malappuram, Lucknow, Jaipur, Thiruvananthapuram, Nagpur, Thrissur, Indore, Kanpur, Nashik, Madurai, Bhopal, Tirupur, and Kannur.

- o **Thirty-Eight 'Niche Cities'** are somewhat smaller in terms of overall population (all have population between 1- 2.5 million) but still hit well above their weight in spending per household. Cities in this group include Visakhapatnam, Vadodara, Vijayawada, Patna, Kollam, Rajkot, Agra, Raipur, Ludhiana, Jamshedpur, Srinagar, Aurangabad, Jodhpur, Meerut, Jabalpur, Tiruchirappalli, Asansol, Varanasi, Kota, Bhubaneswar, Mysore, Ranchi, Dhanbad, Allahabad, Amritsar, Bareilly, Moradabad, Gwalior, Hubli-Dharwad, Guwahati, Salem, Durg-Bhilainagar, Saharanpur, Sili-guri, Aligarh, Jalandhar, Chandigarh, and Solapur.

Rural India has been grouped into three sub-regions: "Developed Rural", "Emerging Rural," and "Left-Behind Rural". To enable this categorisation, a District Development Score has been calculated for all the 640 districts by using a set of 21 developmental indicators based on demographics, financial inclusion, access to basic amenities, and asset penetration, among other parameters, which are available from Census 2011. Using the score value, districts have been grouped into three sub-categories (Table 2):

- o **Developed Rural (160 districts)**—districts with the top 25 per cent highest District Development Scores (Examples, Thane, Pune, Kozhikode, Ernakulam, Jalandhar, Ludhiana, Sonapat, Surat, Gandhinagar),
- o **Emerging Rural (160 districts)**—districts with the next 25 per cent highest scores (Examples, Agra, Mathura, Warangal, Mysore, Guntur, Cuddalore, Nashik, Solapur, Jaipur, Ajmer), and

- o **Left-Behind Rural (320 districts)**—Districts with the bottom 50 per cent of scores, the least-developed or more "backward" (Example, Firozabad, Madhubani, Adilabad, Nellore, Jodhpur, Buldana, Gaya, Samastipur, Ratlam, Ganjam, Bastar, Bilaspur) districts.

• **Household income:** Income represents a partial view of economic well-being and comprises the regular or recurring receipts of household economic accounts. It provides a measure of resources available to the household for consumption and savings. A hierarchy of components of income is built up which provides definitions of total disposable household income. The recommended practical definition of income⁴ has been adopted for use in making international comparisons of income.

The total income of all household members earned during the reference period from all the sources as listed below is considered as the household income. The major components of income covered in the survey are income from regular salary/wages, income from self-employment in non-agriculture, income from wages (agricultural labour and casual labour), income from self-employment in agriculture (crop production, forestry, livestock, fisheries, etc.), income from other sources such as rent (from leased out land and from providing accommodation and capital formation), interest dividends received, employer-based pensions.

Agriculture and Allied Activities: Self-employed persons who operate their own farm with or without hiring labour.

■ **Cultivator:** Persons engaged in their own or leased in farm activities are defined as cultivator.

■ **Allied agricultural activities:** Persons engaged in the activities like dairy farming, poultry farming, beekeeping, fisheries, sericulture, pisciculture etc. are defined as allied agriculture workers.

Self-Employed (Employer) in Non-Farm Activities: Persons running their own business enterprise with or without hiring people

■ **Petty traders:** Persons engaged in

providing retail services without permanent establishments (structure), e.g., hawkers, street vendors etc. are called petty traders.

■ **Shop owners:** Persons engaged in providing retail services with small but permanent establishments (structure) are called shop owners.

■ **Businessman with no employee:** Self-employed persons engaged in their own business and not hiring any employee and not classified as petty traders, shop owners or professionals are called Businessman with no employees e.g., wholesaler, contractor, builder etc.

■ **Self-employed- Professional:** Self-employed persons who have acquired professional degree/diploma and are independently engaged in their own professional work e.g., doctors, lawyers, chartered accountants, engineers, architects, scientists, cinematographers, actors, authors, consultants etc.

■ **Self-employed -Non-Professional:** Self-employed persons who are engaged in providing services e.g., plumber, electrician, tailor, artisan, washer man, barber etc. and are not classified as petty traders & shop owners.

■ **Regular Salary/Wage:** Regular salaried/wage are those who are getting salary/wage on a regular basis.

■ **Grade 4:** Unskilled/Skilled employee: 4th Grade unskilled employee like peon, gardener, messenger, porter, unarmed security guard, loader, cook, waiter, ward boys. 4th grade skilled employee like mid wives, driver, mechanic, electrician, carpenters, fitter, fireman, armed security guard, jawan, constable etc.

■ **Clerical:** Includes white collar workers working as clerk and are not senior enough to be called as 'supervisor/officer/executive'. (Interviewers should keep in mind that a salesman/field worker can work in the company as clerk or supervisor or junior or senior executive. Hence, it needs to be probed and accordingly classified)

■ **Supervisory level:** Includes white collar workers working as supervi-

4 For instance, Expert Group on Household Income Statistics (Canberra City Group of UN Statistical Commission): Over 70 experts from 26 national organisations and 7 international organisations were involved in the work of the Canberra Group with objective to enhance national household income statistics by developing standards on conceptual and practical issues related to the production of income distribution statistics. It carried out a metasurvey (survey about surveys) of 106 income components that are actually collected in 30 household income surveys in 25 countries from all continents.

sor/instructor who are not senior enough to be called as 'officers / executives' e.g., head constables, head clerks, station masters, civil overseers. School teacher teaching up to middle level i.e. 8th standard level or below will fall in this category.

■ **Officers/Executive - Junior:** Includes white collar workers reporting themselves as Junior Officers/Executive. Non-gazetted officers in the government and non-management cadre in the private sector company will fall in this category. School teacher teaching at 9-12th standard level will fall in this category.

■ **Officers/Executive - Middle/Senior:** Includes white collar workers reporting them as Middle/Senior Officers/Executive. Gazetted officers in the government and management cadre in the private sector company will fall in this category. University/College teacher will fall in this category. Secondary and higher secondary school headmasters will also fall in this category.

Casual Wage Labour: Casual (i.e., non-permanent) wage labourers are those who are paid on a daily or by piece rate basis.

■ **Agriculture & allied wage labour:** A person is treated as agriculture and allied wage labour if he/she works in agriculture and allied sector units (Dairy farming, bee keeping, poultry farming or fisheries) and earns daily wages in cash or kind or both cash and kind.

■ **Non-agriculture (skilled & unskilled) wage labour:** Includes all skilled (technical training/knowledge) casual (e.g. non-permanent) wage workers e.g. mechanics, tailors, artisans, masons, plumbers, blacksmiths, carpenters, electricians, drivers, barbers, mid wives etc. all unskilled casual (non-permanent) wage workers e.g. construction workers, helpers, sweepers etc.

Other sources of earning:

■ **Earning from Other sources:** Persons reporting their earnings from pension/Rent/Interest /Dividend/Royalty/Remittance

■ **Rental (land/house):** Amounts charged to the tenant by property owners for the use of the owner's property.

■ **Interest/remittance/dividend/royalty:** Interest is the amount

earned on savings accounts, deposits, or amounts received by the lenders from borrowers for loans taken. Remittances are both domestic and international. Domestic Remittance is the amount sent by the family members who are living in India to the household, where the person providing the amount is not residing in the household of the recipient. International Remittances is the amount received by the household from family members or others living overseas. Dividend is the profit of companies that is distributed to the owners (Shareholders) of the company. Royalty is a fee that a business franchise owner must pay to be part of a franchise system, or the fee received by authors from publishing houses on sale of their books

■ **Pension/Bonus:** Pension is a monthly payment made to someone who is retired from work and by virtue of his employment in an organised sector which he/she gets periodically. On the other hand Bonus is a one-time payment made by an employer to an employee in addition to salary as a reward for good service or performance.

■ **Social insurance/assistance:** Social insurance is any government-sponsored program for securing the lives of Old, Helpless, permanently disabled, widow etc. For e.g., Old Age Pension from Government, Widows Pension, Permanent Disability, disability grants, for Workmen's Compensation Unemployment Insurance, Pneumoconiosis and Silicosis Funds and similar funds to promote the welfare of the people by securing and protecting, as effectively as it may, a social order in which justice, social, economic, and political, shall inform all the institutions of the national life.

• **Routine consumption expenditure:** Household consumption that includes the value of all goods and services provided in kind by the employer or because of home production (excluding the value of imputed rent for owner-occupied dwellings). It includes food, non-food and consumer services.

Food items: While recording consumption, care should be taken to include consumption on ceremonies, parties, etc. If the household makes any transfer payment in terms of

commodities (like cereals, beverages, fruits, vegetables pulses, etc.), the quantity of such commodities should not be shown under domestic consumption of the payer household. For this survey, the portion out of that receipt consumed by the recipient household during the reference period was shown against the consumption of the recipient household.

Non-Food items: includes house rent, LPG, other cooking fuel, conveyance-public transport, clothing & footwear, etc.

Consumer Services: includes expenditure on education (school uniforms, fees, stationery, etc.), health related issues such as the doctors' fees, medicines, tests etc., on usage of mobile phone, landlines and internet, entertainment and other services like repair, maintenance etc.

• **Unusual household expenditure:** It includes occasional but large annual expenditures on social ceremonies (marriage, birth and other social events), health/medical, higher education, leisure and holiday travel, jewelry etc.

• **Surplus income:** Surplus income refers to the current household income less current routine consumption expenditure and unusual expenditure.

• **Investment:** The annual investment made by all the members of household in stock markets (shares/debentures/bonds), small savings, insurance, others.

The imputed rent of owner-occupied houses is excluded from consumption expenditure. Any expenditure incurred towards the productive enterprises of the households is also excluded from the household consumer expenditure.

• **Reference period (The accounting period):** As per recommendation of Expert Group on Household Income Statistics (Canberra City Group of UN Statistical Commission) accounting period used for income distribution is one year, hence we considered financial year for ICE 360° surveys as reference period for instance, the reference period for the latest round was April 2020 to March 2021, however, reference period for other household information such as demographic indicators (occupation, education, lifestyle, etc.) was collected as on the date of survey.

Period of survey: Primary data was collected during January 2021 to June 2021. ●

ANNEXURE 4:

ESTIMATING THE UPPER TAIL OF INCOME GROUPS

One of the major outputs of the ICE 360⁰ surveys is the distribution of households by income. With such a large sample, the surveys could provide income distributions at a much-disaggregated level. The distributions are available at the state level for rural and urban areas separately. Further,

distributions are also available for geographical clusters, level education, occupation and for million plus cities. In Indian context, such a unique income data set which is collected by deploying appropriate survey approach and methodology is not available from any other source.

Despite the large sample size, the higher-income groups (annual household income over Rs 5 lakh) could not be extended further, and their distribution is erratic due to fewer observations. This is probably because the sample selected is in random clusters and rich households tend to live in clusters. Thus, to derive such a distribution purely through sample surveys would mean increasing the sample several folds. In view of this, we have used a theoretical model to estimate the distribution of high-income households beyond the range available in

ICE 360⁰ surveys. The broad approach is to approximate the existing observed distributions to a theoretical distribution and then extend the theoretical distribution for the desired income ranges.

THE THEORETICAL MODEL

One of the income distributions commonly used to explain the upper tail is through Pareto's Law⁵, first started by its author in 1896.

According to Pareto's Law, if $N(y)$ is the number of people or households having an income over 'y', then

$N(y) = by^{-a}$, where 'a' and 'b' are parameters.

When this law is turned into a probability distribution, we get

$$F(y) = P(y \leq y) = 1 - N(y)/N(y_0)$$

Where y_0 is the lowest income (exogenously fixed) beyond which Pareto's Law applies.

If we set $y^* = y/y_0$, where $y^* > 1$, then

$$F(y^*) = 1 - 1/(y^*)^a = 1 - (y^*)^{-a}$$

The corresponding density function is given by

$$f(y^*) = a/[(y^*)^{(1+a)}] = a (y^*)^{-(1+a)}$$

and the mean income in the original money units is

$$E(y) = y_0 [a/(a-1)]$$

ESTIMATED INCOME DISTRIBUTION

The parameter 'a' can be estimated from the observed frequencies generated through ice 360⁰ survey. Since the Pareto Distribution has only a single parameter, equating the expected mean income as given earlier with the observed mean from the sample, it is possible to derive an estimate of 'a'. This procedure would, however, fail to consider the dispersion or disparity in income distribution. A better procedure would be to use the minimum chi-square method to estimate 'a'.

The theoretical model is fitted for households with an annual income over Rs. 125,000. The original data were reclassified into finer income groups to get a better estimate of 'a'. In all, the households were distributed into over 30 income classes. The upper tail, that is, above Rs 500,000, had 20 classes.

From this distribution the value of 'a' was estimated through the method of minimum chi-square.

This value of 'a' was used to derive the theoretical frequencies of households in the different income groups. ●

5 Pareto, V. (2003 (1896)). Translation of Pareto, V. (1896). 'On the distribution of wealth and income'. In F.A. Cowell, editor, The economics of poverty and inequality, Volume II, Elgar Reference Collection, Cheltenham, reproduced from M. Baldassarri and P. Ciocca, editors, Roots of the Italian school of economics and finance: From Ferrara (1857) to Einaudi (1944), Volume 2. Houndmills: Palgrave.