

## A Scale to Measure Family Level of Living in Four Barrios of Los Baños, Laguna\*

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In the development of any science, tools and techniques for measuring the variables under investigation are indispensable. Appropriate instruments of observation and measurement have significance not only for their very "practical" usefulness but also for their crucial role in the testing of hypotheses and the development of scientific theory. P. W. Bridgman points out that in science a question is regarded as meaningless unless a set of operations can be specified and carried out which would yield a definitive answer.

Concepts for empirical examination need to have operational definitions and appropriate indicators or measures in order to test hypothesized relationships between two or more given variables. Research in sociology, social psychology, economics, and other related fields often include level of living as one of the independent or dependent variables. Evaluation studies in community development, extension, and other similar programs frequently employ some measure of level of living to indicate the effects of the program on a particular community. The numerous studies in the United States on

the adoption of recommended farm and home practices often relate level of living to adoption behavior. The recognition of level of living as one important status factor suggests the need for constructing a device which would measure level of living. In the Philippines, no such measuring device has as yet been systematically constructed, standardized, and tested for utility and predictive value.

### Objectives of the Study

The objectives of the present study are: (1) to develop a level of living scale which would measure family level of living in four barrios of Laguna; (2) to determine the utility and value of this level of living scale in predicting other sociological variables.

### Review of Literature

In the United States several scales for measuring socio-economic status and level of living have been developed. These scales contain slightly different items depending upon the author's conceptualization of the variable being measured. Chapin's Social Status Scale, Sewell's, Mangus' and Cottam's level of living index, and the Guttman-Chapin Scale (which is the same as the Chapin scale but with differently weighted items) include material possessions plus cultural possessions and other items indicating religious and

\* This study is part of a research project which was financed by the Council on Economic and Cultural Affairs, Inc., now the Agricultural Economic Council undertaken by the University of the Philippines College of Agriculture, College, Laguna.

<sup>1</sup> P. W. Bridgman, *The Logic of Modern Physics*, (New York: MacMillan Co., 1934).

social participation.<sup>2</sup> However, Belcher and Sharp modified Sewell's socio-economic scale on the basis of the results of factor analysis. These investigators found that Sewell's scale does not measure only a single common factor. Religious and social participation items in the scale reflect another factor than that measured by the material and cultural possession items. The first common factor extracted from the Sewell scale was defined as level of living and from the items most indicative of this factor, a level of living scale was constructed.<sup>3</sup>

Level of living indicates the status of a family with respect to the material and cultural possessions which it possesses. Leagans defines level of living as "the actual expenditures of individuals or family groups. It implies the creation of a composite picture of prevailing choice patterns of economic goods and services consumed by an individual or family. It is the status which a person or family occupies with reference to the ownership and consumption of prevalent types of goods and services."<sup>4</sup> A level of living

scale attempts to get at the status of a family with regard to what actually exists as far as possession and use of material and cultural items is concerned.

The number of items included in the different scales varies. Mangus and Cottam used 59 items in their scale for measuring level of living of farm families in Ohio. Sewell used 123 items in his studies on Oklahoma families. In 1943, however, he published a 14-item short scale consisting of items from the original scale which field experience has shown to be easiest to enumerate. Although the short scale resulted in a sacrifice of reliability, Sewell found it adequate and useful for studies where use of the longer scale seemed inadvisable.<sup>5</sup> Belcher and Sharp found that they could measure level of living with a scale made up of 10 items. When the scores from his new short scale were correlated with scores on the level of living items in the original Sewell scale, the correlation yielded a coefficient of .94.<sup>6</sup> Danley and Ramsey standardized a 9-item and a 13-item scale for farm and nonfarm families in New York. The two scales gave similar predictions with no significant differences in ability to predict other sociological variables. In 36 comparisons there were no statistically significant differences in the prediction given by the 13-item and the 9-item scale.<sup>7</sup>

Evidences from these studies cited above suggest that a scale could be shortened considerably for very practical considerations and still retain its usefulness and predictive value.

<sup>2</sup> F. S. Chapin, *The Measurement of Social Status*, (Minneapolis; University of Minnesota Press, 1933), W. H. Sewell, *The Construction and Standardization of a Scale for the Measurement of the Socio-Economic Status of Oklahoma Farm Families*, Stillwater: Oklahoma A. E. S. Bull. 9, 1940. A. R. Mangus and H. R. Cottam, *Level of Living, Social Participation, and Adjustment of Ohio Farm People*, Columbus, Ohio A. E. S. Bull. 624, 1941. L. Guttman, "A Revision of Chapin's Social Status Scale," *American Sociological Review*, 7, (1942), 362-369.

<sup>3</sup> J. C. Belcher and E. F. Sharp, *A Short Scale for Measuring Farm Family Level of Living: A Modification of Sewell's Socio-Economic Scale*, Oklahoma A. and M. Coll. A. E. S. Bull. T-46, 1952.

<sup>4</sup> J. P. Leagans, *The Educational Interests of Farm Operators in North Carolina as Related to Work of the Cooperative Agricultural Extension Service*. Unpublished Doctoral Dissertation, University of Chicago, Department of Education, September 1949. (Cited in Charles Crawford, "Some Considerations in and a Method for Developing a Level of Living Scale," *A Collection of Papers Presented by the Class in Rural Sociology*, 553 Spring, 1957, Pennsylvania State University, University Park, Pa.)

<sup>5</sup> W. H. Sewell, "A Short Form of the Farm Family Socio-Economic Status Scale," *Rural Sociology*, 8, (June, 1943), 161-169.

<sup>6</sup> J. C. Belcher and E. F. Sharp, *op. cit.*

<sup>7</sup> R. A. Danley and C. E. Ramsey, *Standardization and Application of a Level of Living Scale for Farm and Nonfarm Families*, Cornell University, A. E. S. Memoir 302, July, 1959.

## RESEARCH PROCEDURES

*Source of Data for the Present Study*

Data for this study were gathered from a complete enumeration of 1,662 households in four barrios of Los Baños, Laguna. These barrios differ from each other in terms of size, location, and socio-economic characteristics. Maahas is a predominantly agricultural barrio, a one-crop area devoted to rice. Mayondon is a fishing village with some degree of diversified agricultural enterprises such as duck raising and tract gardening. Poblacion is the seat of the municipal government and is regarded as the town proper. Batong Malake is the barrio immediately adjacent to an urbanizing center which is the U. P. College of Agriculture. The number of households in these barrios are 106 for Maahas, 378 for Poblacion, 539 for Mayondon and 649 for Batong Malake.

Interview schedules from which data were obtained included information for a study of factors associated with leadership in these four barrios. Level of living is one of the variables which have been hypothesized to be related to leadership status.

## Original Battery of Items

The first step in developing a level of living scale is to select items which exhibit face validity, i.e., items which seem to reflect level of living based on what one knows about the culture of a place. Two criteria were used in choosing the items to be included in the interview schedule: (a) material nature of the item and (b) the value placed upon the possession of the item or upon a certain "level" of possession.<sup>8</sup>

<sup>8</sup> S. E. Ramsey and J. Vollazo, "Some Problems of Cross-Cultural Measurement," *Rural Sociology*, 25, (March, 1960), 93.

The original battery of items from which the scale was developed consists of the following:

1. Living room set
2. Dining room set
3. Radio
4. Bed
5. Newspaper or magazine
6. Clothes closet (aparador ng damit)
7. China closet (aparador ng pinggan)
8. Dresser (tokador)
9. Toilet
10. Book
11. Sewing Machine
12. Study table
13. Water supply
14. Lighting system
15. Bookcase
16. Stove
17. Piano
18. Phonograph
19. Television set
20. Refrigerator
21. Electric fan

The last five items are quite obviously "high status" items and hardly anybody in Maahas and Mayondon possess them (TABLE 1), hence they were not included in the final scale although they meet the two criteria set above. Material items which are either practically nonexistent in a community or possessed by everybody in the community could hardly be considered as "good" items for differentiating between high and low level of living. Because of the almost prohibitive cost of the piano, phonograph, television set, refrigerator, and electric fan, these items function as status symbols.

The television antenna is a particularly conspicuous symbol. In some cases possession of these items is associated with the opportunity which a member of the family had to go abroad on some kind of scholarship or travel grant. Filipinos

who go to the United States purchase these items due to their relatively low cost in dollars, compared to their value

in pesos. A refrigerator, for example, may cost almost as much as a teacher's one-year salary.

TABLE 1. NUMBER OF HOUSEHOLDS POSSESSING CERTAIN "HIGH STATUS" MATERIAL ITEMS

Household Items	Maahas		Mayondon		Poblacion		Batong Malake*	
	Num-ber	Per Cent	Num-ber	Per Cent	Num-ber	Per Cent	Num-ber	Per Cent
Piano	—	—	3	0.6	21	6.0	28	4.3
Phonograph	1	1	5	1.0	16	4.2	36	5.5
Television set	1	1	1	0.2	12	3.2	15	2.3
Refrigerator	—	—	1	0.2	21	6.0	51	7.9
Electric fan	1	1	5	1.0	31	8.1	44	6.7
Total No. of Households	106		539		378		649	

\* In Batong Malake, three households have more than one refrigerator and more than one electric fan.

### Item Analysis and Item Selection for the Final Scale

The logic of internal consistency was applied in the selection of items for inclusion in the final scale. The method employed to determine internal consistency or whether each item is related to the total score for each household, involved the use of chi square tests and phi coefficients. A total score was calculated for each household on the basis of a 1 and 0 scoring system for possession or nonpossession of each item. The total scores of all the households in one barrio were then arranged from highest to lowest and the scores were divided into two nearly equal-sized groups. The upper half was considered as the high group and the lower half, the low group. A two by two chi square table was set up for each respective level of living item. These tables showed the distribution of scorable and nonscorable responses by

high and low groups. An example of such table is given below:

TABLE 2  
SEWING MACHINE (POBLACION)

	Nonscorable Responses	Scorable Responses	Total
Low group	161	25	186
High group	73	118	191
Total	234	143	377

$$\chi^2 = 93.52$$

$$d.f = 1$$

Level of significance .01 level

$$\text{Phi coefficient} = .50$$

The hypothesis being tested in each chi square table is that more household heads in the "high group" than in the "low group" would have scorable responses. Conversely more household heads in the low group than in the high group

would have nonscorable responses. Since the chi square value in the example given is statistically significant beyond the .01 level, the sewing machine is considered as one item for inclusion in the scale because it discriminates between those household heads who have high scores and those who have low scores. Phi coefficients were computed to determine the degree of relationship between the possession of an item and the total score. TABLE 3 shows the chi square values and phi coefficients for the 16 items. In Maahas, scorable responses for stove and bookcase failed to discriminate between high and low groups. Each item was tested for each barrio in order to establish some degree of "universality" in discriminating power such that the resulting scale would not be "relative" to each barrio. The items which failed to discriminate were rejected and eliminated from the original list. After testing the 16 items, two were excluded (stove and bookcase) and a rescoring was made on the basis of the items in the final scale.

In the construction of this scale the items were not weighted in spite of the possible questions which might be raised regarding the relative importance of each item in measuring level of living. On the basis of results obtained in several studies, assigning different weights to the items of a scale seemed unnecessary. Belcher and Sharp found a correlation of 0.998 between scores obtained by using a weighted scale and those obtained by an unweighted scale.<sup>9</sup> Harris did the same thing and found a correlation of 0.99.<sup>10</sup> Further evidences from the use

<sup>9</sup> J. C. Belcher and E. F. Sharp, *op. cit.*

<sup>10</sup> M. J. Harris, *Review of Methods of Scale and Item Analysis and Their Application to a Level of Living Scale in North Carolina*, Progress Report Rs. 13, July, 1951, North Carolina State College, A. E. S. Raleigh, North Carolina. (Cited in Charles Crawford, *op. cit.*)

of adoption scales do not justify item weighting. Donahoo reported a correlation of 0.98 between weighted and unweighted adoption of farm practices scale scorers.<sup>11</sup> Fliegel reported a correlation of 0.96 between unweighted scores and scores weighted on the basis of factor loadings derived from factor analysis.<sup>12</sup>

### Items in the Final Level of Living Scale

TABLE 4 shows the items included in the final scale which was developed. The scorable responses indicate the response for which one point was assigned in the scoring system. The pooled chi square values which are all statistically significant beyond the .01 level show the ability of each item to discriminate between level of living scores of the high group and those of the low group. Phi coefficients which are based on the pooled chi square values indicate the correlation between the item and the total score. The same scorable responses were used for the four barrios.

TABLE 5 shows the percentage of household heads in each barrio who have scorable responses for each item. In every item, Poblacion and Batong Malake have more scorable responses than either Maahas or Mayondon. This is to be expected since Poblacion and Batong Malake are more urbanized and the average incomes in these two barrios are higher than Maahas or Mayondon. The average

<sup>11</sup> A. W. Donahoo, *Soil Management Practices Used by Participants in the Institutional On-Farm Training Program for Veterans*, Master's Thesis, Iowa State University, 1949. (Cited in E. M. Rogers and E. L. Rogers, "A Methodological Analysis of Adoption Scales," *Rural Sociology*, 26, (December, 1961), 325-336.

<sup>12</sup> F. C. Fliegel, *A Multiple Correlation Analysis of Factors Associated With Adoption of Farm Practices*, Ph.D. Thesis, University of Wisconsin, 1955. (Cited in E. M. Rogers and L. E. Rogers, *op. cit.*)

TABLE 3. DISCRIMINATING POWER OF THE 16 ORIGINAL BATTERY OF ITEMS AS TESTED FOR THE FOUR BARRIOS

I t e m s	Maahas		Mayondon		Poblacion		Batong Malake	
	N = 106		N = 539		N = 378		N = 649	
	Chi Square	Phi Coefficient	Chi Square	Phi Coefficient	Chi Square	Phi Coefficient	Chi Square	Phi Coefficient
1. Living room set	30.51	.54	155.35	.54	88.27	.48	318.76	.70
2. Dining room set	30.72	.54	103.80	.44	123.03	.57	120.91	.43
3. Bed	13.24	.35	97.21	.42	176.52	.68	291.88	.67
4. Dresser	9.33	.30	56.41	.32	97.08	.51	163.49	.50
5. Clothes closet	20.08	.43	118.65	.47	65.17	.42	141.91	.47
6. China closet	10.37	.31	168.03	.56	138.89	.61	210.30	.57
7. Study table	12.95	.35	25.91	.22	93.28	.50	90.63	.37
8. Radio	35.28	.58	159.82	.54	151.73	.63	293.39	.67
9. Sewing machine	24.96	.49	77.99	.38	93.52	.50	179.60	.53
10. Book	13.43	.36	72.40	.37	165.26	.66	144.86	.47
11. Newspaper or magazine	23.76	.47	74.55	.37	142.20	.61	180.89	.53
12. Toilet	13.43	.36	136.81	.50	131.17	.59	166.95	.53
13. Lighting System	37.52	.59	208.46	.62	104.45	.62	172.91	.52
14. Water supply	10.61	.31	90.85	.41	45.39	.35	134.55	.46
15. Stove	0°	—	19.82	.19	103.21	.52	144.63	.47
16. Bookcase	3.16	.17	20.74	.20	105.33	.53	159.16	.50

° Not statistically significant.

level of living scores for households in	Mayondon .....	3.94
the four barrios are:	Poblacion .....	8.35
Maahas .....	Batong Malake .....	7.66
		3.86

TABLE 4. ITEMS IN THE FINAL LEVEL OF LIVING SCALE

Items	Scorable Response	Pooled Chi Square	Correlation with Total Score Based on Pooled Chi Square Phi Coefficients
1. Living room set	Possession	566.50	.58
2. Radio	Possession	546.30	.57
3. China closet	Possession	493.17	.54
4. Bed	Possession	454.22	.52
5. Lighting system	Electricity or gas or alcohol lamp using air pressure (more convenient and better lighting than ordinary fuel-wick system)	360.62	.47
6. Book	Possession of at least one	355.66	.46
7. Sewing machine	Possession	345.96	.455
8. Newspaper or Magazine	Regular purchase or subscription	339.59	.450
9. Clothes closet	Possession	334.20	.446
10. Dining room set	Possession	314.99	.433
11. Dresser	Possession	308.57	.42
12. Toilet	Antipolo system, flush or any elevated structure more serviceable and comfortable than mere pit	239.49	.38
13. Study table	Possession	174.61	.323
14. Water supply	Piped into the house	169.30	.320

Reliability of the Scale

Reliability of a scale refers to the degree to which a scale consistently measures what it intends to measure. To determine the reliability of this 14-item scale, the split-half method was used. The coefficient of reliability of the scale after Spear-

man-Brown's Correction has been applied are as follows:<sup>13</sup>

Maahas .....	0.84
Mayondon .....	0.82

<sup>13</sup> H. Sorenson, *Statistics for Students of Psychology and Education*, (New York: McGraw-Hill Book Co., Inc., 1936), p. 342.

TABLE 5. PERCENTAGE OF HOUSEHOLDS IN EACH BARRIO WHO HAVE SCORABLE RESPONSES FOR EACH ITEM

Items	Maahas	Mayondon	Poblacion	Batong Malake
	N-106	N-539	N-378	N-649
	Per Cent	Per Cent	Per Cent	Per Cent
1. Living room set	26.4	46.9	76.7	60.1
2. Dining room set	56.6	32.8	58.6	65.8
3. Bed	10.4	21.7	60.7	57.5
4. Dresser	7.6	11.7	24.9	21.9
5. Clothes closet	66.9	72.4	83.0	78.0
6. China closet	30.2	33.4	54.9	43.8
7. Study table	32.0	5.8	40.3	34.5
8. Radio	23.6	30.3	62.3	55.6
9. Sewing machine	17.9	21.9	37.9	40.5
10. Book	18.9	15.4	37.9	32.8
11. Newspaper or magazine	40.6	21.3	54.6	57.8
12. Toilet	18.9	17.6	72.6	64.4
13. Lighting system	27.4	34.5	82.2	76.9
14. Water supply	8.5	31.5	88.6	76.6

Poblacion ..... 0.90

Batong Malake ..... 0.80

The above results generally indicate a high degree of scale reliability and these data indicate that the scale is a reliable measure of the level of living of families within these four barrios. The results obtained are equal to and higher than the minimum of .80 usually required for coefficients obtained by this technique.<sup>14</sup>

#### Discriminatory Power of Each Item Based on Pooled Chi Square Tests for All Barrios and Tests for Individual Barrios

TABLE 6 shows for each item in the final scale, the sum of 4 chi squares obtained for the 4 barrios, the pooled chi square based on the total number of households (1662), and the differences

between these two sets of values. These computations of the interaction or heterogeneity chi square were made to determine whether the discriminating power of an item is consistent or inconsistent from one barrio to another.<sup>15</sup> If the difference between the two sets of chi square values is statistically significant, this is an indication that the discriminating power of the item differs for each barrio. The values of the heterogeneity chi square, indicated in TABLE 6, are all statistically significant and therefore evidence differential discriminating power of each item from one barrio to another. These items have greater discriminatory power in one barrio than in another but all of them have the capacity to differentiate between households who have high and those who have low level of living.

<sup>14</sup>J. C. Belcher and E. F. Sharp, *op cit.*

<sup>15</sup>G. W. Snedecor, *Statistical Methods*, (Ames, Iowa: Iowa State College Press, 1946), p. 191.



TABLE 6. HETEROGENEITY CHI SQUARE VALUES FOR EACH LEVEL OF LIVING ITEM

Item	Sum of 4 Chi Squares (4 d. f.)	Pooled Chi Square (1 d. f.)	Difference * (3 d. f.)
1. Living room set	592.89	566.50	26.39
2. Dining room set	378.46	314.99	63.47
3. Bed	578.85	454.22	134.63
4. Dresser	326.31	308.57	17.74
5. Clothes closet	345.81	334.20	11.61
6. China closet	527.59	493.17	34.42
7. Study table	222.77	174.61	48.16
8. Radio	640.22	546.30	93.92
9. Sewing machine	376.07	345.96	30.11
10. Book	395.95	355.66	40.29
11. Newspaper or magazine	421.40	339.59	91.81
12. Toilet	448.36	239.49	208.87
13. Lighting system	523.34	360.62	162.72
14. Water supply	281.40	169.30	112.10

\* All of these values are statistically significant beyond the .01 level.

Situational factors and peculiar conditions characterizing the barrio as a whole apparently affect the "behavior" of each item as far as discriminating power is concerned. The possession or nonpossession of level of living items is apparently not wholly determined by the resources and values of the individual households within each barrio. Perhaps the meaning and importance attached to the different items in the scale is to a large extent a function of the socio-economic status, resources, and value orientations within the community in general. In using and interpreting this scale, the level of living scores should not be regarded as an absolute measure of level of living. It is an ordinal scale which indicates one household's level of living in relation to that of another household. The score expresses that one household has higher or lower level of living than another household. A score of 14 does not necessarily mean twice as high a level of living as a score of 7. All

that it suggests is that Household A which has a score of 14 has a much higher level of living than Household B which has a score of 7 but the score does not indicate precisely how much higher.

#### Possible Applicability on the Scale for Other Places

This scale has been developed and standardized in the four barrios of Los Baños, Laguna, which were included in this study. Its applicability for other areas in the Philippines needs to be investigated further. However, there is reason to believe that the same original 16 items could be used in other areas but the cutting points for the scorable and nonscorable response for each item might have to be modified in some cases. For example, one would expect every household to possess a stove, so mere possession would not discriminate between those who have high and those who have low level of living. It is also

very possible that in one barrio all the households would have stoves which use wood for fuel so the kind of fuel used could not be used as a criterion for determining the scorable and nonscorable response. However, the number of burners, size or materials it is made of may be used as a cutting point. It would be possible to find some barrios where every household would have a radio, for example, Barrio Forbes Park. Mere possession of a radio in that case would not be sufficient to discriminate between those who have high and those who have low level of living. In Barrio Forbes Park, therefore, the number and kind of radios possessed would be a more valid cutting point. Even within such a very exclusive and obviously high status barrio, one would expect high and low level of living, relatively speaking, within the context of their particular community.

### Predictive Value of the Scale

A standardized scale which is considered reliable would neither be useful nor meaningful if it could not predict other variables. A test of the predictive value of this 14-item scale lies in the resulting relationships between level of living scores and other variables which have been empirically demonstrated previously or theoretically predicted. When the empirical results of an investigation using an operational measure are in agreement with what could be expected in terms of theory, that measure is said to possess predictive power or construct validity.<sup>16</sup>

Data gathered in the research project for which this level of living scale has been developed contain other sociological and social psychological variables which were investigated in relation to leaders and leadership patterns in the four barrios

of Los Banos, Laguna. This section of the research report will analyze the extent to which level of living is related to: (1) other status variables; (2) attitudes toward and perceptions of certain political and community matters; and (3) membership in formal social organizations.

### (1). Level of Living and Other Status Variables

TABLE 7 shows that level of living has positive and statistically significant relationships with other status variables like total family income, expenditures, value of the house, age and leadership status of the household heads in the four barrios. The highest correlation was observed between level of living and value of the house. This is an indication that as the cost of the house increases one would expect to find more of these material and cultural possessions which comprise the level of living scale. The fact that family income does not have a much higher relationship to level of living suggests the operation of many other variables besides income in determining level of living.

The older the household heads, the higher is their level of living. Perhaps this relationship arises from the greater number of years within which their families had to accumulate these different possessions.

The relationship of length of residence and size of family to level of living is not consistent in the four barrios. In Mayondon, the correlation between length of residence and level of living is very negligible (.03) while in the three other barrios, the relationships are positive and statistically significant. In order to determine if age accounts for the correlation between level of living and length of residence, controlled analysis was performed. With age held constant, the correlations between the two variables dropped from .15

<sup>16</sup> L. J. Cronbach and P. E. Meehl, "Construct Validity in Psychological Tests," *Psychological Bulletin*, 52, (1955), 281-302.

to .06 in Batong Malake; from .20 to .11 in Maahas; from .22 to .01 in Poblacion; and from .03 to .25 in Mayondon. The decrease in the magnitude of the zero-order correlations between level of living and length of residence when age is controlled indicates that age accounts for practically all of the relationship between

length of residence and level of living. However in Maahas, there is a correlation between these two status factors which cannot be accounted for by age. Apparently the degree to which a family has been established in the community contributes to the extent to which level of living items are possessed.

TABLE 7. RELATIONSHIP OF LEVEL OF LIVING TO OTHER STATUS VARIABLES IN THE FOUR BARRIOS

	Maahas	Mayondon	Poblacion	Batong Malake
	r	r	r	r
Total family income	.34	.38	.32	.49
Total family expenditures	.25	.26	.39	.37
Value of the house	.42	.51	.42	.55
Age of the household head	.17	.30	.32	.18
Length of residence	.20	.03	.22	.15
Size of family	.33	.18	.04	-.34

LEADERSHIP STATUS AND LEVEL OF LIVING

Leadership Status	Leader	Non-Leader	Leader	Non-Leader	Leader	Non-Leader	Leader	Non-Leader
	(Mean Scores)							
	7.00	3.30	5.81	3.64	10.36	8.35	11.78	7.45

MEAN LEVEL OF LIVING SCORES IN THE 4 BARRIOS

	Maahas	Mayondon	Poblacion	Batong Malake
	3.86	3.94	8.35	7.66

The association between family size and level of living varies not only in magnitude but also in direction. In the two more rural barrios (Maahas and Mayondon) the correlations are positive and statistically significant. In Poblacion, the correlation is positive but very low (.04). On the other hand, a highly significant negative correlation (-.34) was observed in Batong Malake. This means that

among larger-sized families, level of living tends to be lower than in smaller-sized families. In order to find out if these relationships can be attributed to income, partial correlations were computed. With income controlled, the correlations between family size and level of living dropped from -.34 to -.29 in Batong Malake; from .33 to .23 in Maahas; from .04 to .02 in Poblacion; and from .18 to .11 in Ma-

yondon. The fact that the correlations were not reduced to zero when income was held constant indicates that only a portion of the relationship between family size and level of living is explained by income. There is an association between these two factors which is independent of income.

In the four barrios there is a consistent tendency for leaders to have higher mean level of living scores than non-leaders. Apparently leadership position and influence is associated more with people who have high than those who have low level of living. Further examination of TABLE 7 shows that the more urbanized barrios, Poblacion and Batong Malake, have higher level of living scores than Maahas and Mayondon which are more rural in nature. This means the high level of living is associated with a greater degree of community urbanity and sophistication.

Findings in this study corroborate those of Danley and Ramsey that factors of social stratification which contribute directly to the material style of life are positively and significantly correlated with the level of living scale they developed.<sup>17</sup> Present findings also agree with the results of another study on "Sources of Variation in the Level of Living of Farm Operators in the United States." The researchers found that economic factors, specifically income, do not explain a major part of the total variation in the percentage of farms reporting seven level of living items. Instead, degree of urbanization, geographic factors, and as far as the South is concerned, four population composition factors: size of household, fertility ratio, dependency ratio, and educational attainment level account for much of the regional variation in level of living.<sup>18</sup>

<sup>17</sup> R. A. Danley and C. E. Ramsey, *op. cit.*

<sup>18</sup> S. C. Mayo, C. H. Hamilton, and C. W. Pettus, "Sources of Variation in the Level of Living of Farm Operators in the United States," *Social Forces*, 39, (May, 1961), 338-346.

In order to establish further the utility of the present scale, its relationship to other material resources of the family was investigated. TABLE 8 reveals that ownership of livestock, animal drawn vehicle and agricultural tools and equipment occurs more among those with low level of living. However, motor vehicles (jeeps and cars), real estate, and agricultural lands tend to be possessed more by families with high level of living although in the case of the latter, the relationship is not linear. A greater proportion of the agricultural lands (14 per cent) belong to the lowest level of living category than to the two middle categories (8 per cent and 13 per cent), but the highest percentage of such ownership (25 per cent) comes in the highest category. When one looks at the figures on "no other possessions," it is apparent that this is more characteristic of the low level of living families.

Very closely allied to income and property ownership is the type of taxes paid by the household head. From TABLE 9 it can be observed that the proportion of household heads paying Cedula B for salary and other sources of income increases as the level of living rises. In the case of Cedula A (Residence Certificate) and real estate tax there is a slight curvilinear tendency. A higher proportion of those in the lowest level of living category paid these types of taxes than those in the middle categories but in both instances the highest proportion of tax payers can still be found among those with high scores.

Educational attainment and occupation are two of the most important criteria for social stratification. It would, therefore, be of substantive value to find out the extent to which the scale is related to these two variables. TABLE 10 strongly suggests the existence of such relationship. Chi square test shows statistically significant differences in the level of

TABLE 8. RELATIONSHIP OF LEVEL OF LIVING TO OTHER POSSESSIONS (FOUR BARRIOS)

Other Possessions	Level of Living Scores							
	0—4		5—7		8—10		11—14	
	Number	Per cent of 651 Respondents	Number	Per cent of 547 Respondents	Number	Per cent of 335 Respondents	Number	Per cent of 390 Respondents
Livestock	141	22	49	9	48	14	59	15
Animal drawn vehicles	23	4	4	1	2	1	—	—
Motor vehicle	2	1	2	1	5	1	28	7
Real estate	57	9	51	9	36	11	94	24
Agricultural lands	94	14	43	8	42	13	98	25
Agricultural tools and equipment	97	15	30	5	23	7	26	7
No other possessions	223	34	58	11	45	13	46	12

TABLE 9. RELATIONSHIP OF LEVEL OF LIVING TO TYPE OF TAXES PAID BY THE HOUSEHOLD HEAD (FOUR BARRIOS)

Type of Taxes Paid	Level of Living Scores							
	0—4		5—7		8—10		11—14	
	Number	Per cent of 651 Respondents	Number	Per cent of 547 Respondents	Number	Per cent of 335 Respondents	Number	Per cent of 390 Respondents
Cedula A	572	88	310	57	270	81	378	97
Cedula B	23	4	40	7	53	16	196	50
Real estate	221	34	137	25	152	45	271	69

living scores of household heads who have different levels of education. Forty-eight per cent of those who had primary schooling have scores of 8 to 14, 55 per cent of those who had high school education, and 89 per cent of those with college and graduate training have similar level of li-

ving scores. The tendency for high educational level and high level of living to occur together is quite obvious. The same phenomenon was observed in Batong Malake and Mayondon. In Maahas the chi square value is not statistically significant but the same tendency is in evidence.

TABLE 10. RELATIONSHIP OF LEVEL OF LIVING TO EDUCATIONAL ATTAINMENT OF HOUSEHOLD HEAD (POBLACION)

Level of Living Scores	Educational Attainment								Total
	Kartilya and Primary		Intermediate		High School		College and Graduate		
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	
0—4	37	38	15	17	15	16	3	4	70
5—7	13	14	24	28	25	27	5	7	67
8—10	25	26	17	19	17	18	13	16	72
11—13	9	20	24	28	29	31	36	49	108
14	2	2	7	8	8	8	16	22	33
Total	96	100	87	100	94	100	73	100	350

## Poblacion

Chi square = 74.49     $\bar{c} = .41$     d.f. = 12    p. <.01

## Batong Malake

Chi square = 140.71     $\bar{c} = .44$     d.f. = 12    p <.01

## Mayondon

Chi square = 39.28     $\bar{c} = .29$     d.f. = 12    p <.01

## Maahas

Chi square = 6.5    d.f. = 6    N. S.

TABLE 11. RELATIONSHIP OF LEVEL OF LIVING TO OCCUPATION OF THE HOUSEHOLD HEAD (BATONG MALAKE)

Level of Living Scores	Occupation of Household Head								Total
	White-Collar		Proprietary and Managerial		Farming		Blue-Collar		
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	
0—4	17	8	10	19	27	35	87	37	141
5—7	37	17	11	20	14	18	71	30	133
8—10	50	23	14	26	13	17	46	20	123
11—13	87	40	15	28	19	24	29	12	150
14	27	12	4	7	5	6	2	1	38
Total	218	100	54	100	78	100	235	100	585

Batong Malake

Chi square = 122.80       $\bar{c} = .42$       d.f. = 12       $p < .01$

Poblacion

Chi square = 83.3       $\bar{c} = .45$       d.f. = 12       $p < .01$

Mayondon

Chi square = 43.19       $\bar{c} = .26$       d.f. = 12       $p < .01$

Maahas

Chi square = 16.15       $\bar{c} = .36$       d.f. = 4       $p < .01$

An analysis of the level of living scores of household heads who belong to different occupational classifications reveals statistically significant differences, TABLE 11. A higher proportion of the white-collar workers (75 per cent) have scores of 8 to 14. Proprietors and managers come next with 51 per cent. More farmers than blue-collar workers belong to this same category, 47 and 33 per cents, respectively. Similar relationships were also observed in Poblacion, Mayondon, and Maahas.

(2) Attitudes Toward and Perceptions of Certain Political Community Matters

It has been repeatedly theorized and empirically substantiated that status factors influence attitudes, perceptions, opinions, and behavior. Level of living is one indicator of social status and therefore, its association with the aforementioned variables is predicted.

(a) Attitude toward taxation

In response to the question as to whether people should pay taxes or not, 85 per cent of the respondents showed a favorable attitude. Of those who said "yes" 63 per cent have level of living scores of 5 to 14 and of those who said "no", only 54 per cent come from the same category, TABLE 12. The differences in the level of living scores of those who are favorable and those who are unfavorable are statistically significant.

(b) Concept of the pork barrel

The pork barrel is one of the most potent weapons used by politicians particularly during election years. The extent to which it is used or misused by unscrupulous politicians depends to some degree upon whether the electorate understands the pork barrel and appreciates its functions, political or otherwise. Data from this study indicate that in Poblacion, only 34 per cent of the household heads have an accurate notion of what the pork barrel is; 40 per cent in Batong Malake; 43 per cent in Maahas; and only 19 per cent in Mayondon. The rest of the household heads either do not know or have inaccurate and distorted ideas about the pork barrel.

Do high status people know more or know better about this political tool? TABLE 13 shows that 60 per cent of those who have right answers have level of living scores of 5 to 14; only 23 per cent of those with the same scores said "don't know"; but 65 per cent of those in similar category have inaccurate answers. These differences are statistically significant. While more of those with high scores have accurate answers than "don't knows", there are more of them who gave inaccurate responses. The following were some of their conceptions of the pork barrel: (1) sums of money, sources unidentified, which are used to finance va-







awareness of activities in the community. The household heads were asked whether or not factions (political, occupational, prestige, etc.) exist in their barrios. Twenty per cent of the household heads in Maahas reported the existence of factions; 28 per cent in Mayondon; 15 per cent in Poblacion; and 12 per cent in Batong Malake. TABLE 14 shows that more of those who have high level of living scores (8-14) perceive factionalization in Batong Malake (67 per cent). Fifty-nine per cent do not know whether factions exist or not. The differences in the level of living scores of those who perceive the existence of factions and those who report no factions are statistically significant. Household heads with high scores tend to be more sensitive to the existence of factions than those with low scores. The same tendency can be observed in Mayondon and Maahas. In Poblacion, the differences are not statistically significant but the tendency is along a similar direction.

Another important aspect of community living is the pattern of decision-making exercised by leaders and other community members. The three patterns of decision-making are described as follows: (1) authoritarian, whereby the leaders themselves plan, decide, and implement projects and activities for the barrio; (2) democratic, whereby the people themselves plan, decide, and implement projects and activities for the barrio with the guidance of the leaders; and (3) laissez-faire, whereby the people themselves plan, decide, and implement projects and activities for the barrio.

TABLE 15 shows that more of the household heads (60 per cent) who have high level of living scores (5 to 14) perceive the laissez-faire decision-making pattern predominating in Mayondon; 38 per cent of them think that matters are

democratically decided; and 21 per cent perceive authoritarian decision-making. In Batong Malake more of the household heads with high scores (60 per cent) think that decision-making in their barrio is authoritarian; and 47 per cent perceive it as democratic. While there are statistically significant differences in the level of living scores of those who perceive different decision-making processes in their communities, the direction of the difference in Batong Malake is the reverse of what was observed in Mayondon. In the former barrio high level of living was associated more with perception of authoritarian pattern of decision-making while in the latter barrio high level of living was associated more with perception of laissez-faire and democratic decision-making patterns. In Poblacion, only 3 per cent of the respondents said decision-making in their barrio was authoritarian. Ninety-three per cent of the household heads considered the predominant decision-making process to be democratic; and 4 per cent said laissez-faire. No statistically significant differences were observed in the level of living scores of those who perceived different patterns of decision-making in Poblacion. As far as Maahas is concerned, the same tendency was observed. Ninety-seven per cent of the household heads think that decision-making in their barrio is democratic.

### (3) Membership in Formal Social Organizations

Consistent findings in numerous sociological studies have made it almost an empirical generalization that formal participation rates have a positive association with certain variables that are measures of socio-economic status.<sup>19</sup>

<sup>19</sup> L. Nelson, C. E. Ramsey, and C. Verner, *Community Structure and Change*, (New York: MacMillan Co.), p. 253.

TABLE 15. RELATIONSHIP OF LEVEL OF LIVING TO HOUSEHOLD HEAD'S PERCEPTION OF DECISION-MAKING PROCESS IN THE BARRIO (MAYONDON)

Level of Living Scores	Membership in Formal Social Organizations						Total
	Authoritarian		Democratic		Laissez-faire		
	Number	Per Cent	Number	Per Cent	Number	Per Cent	
0 — 4	53	79	236	62	10	40	299
5 — 7	8	12	73	19	11	44	92
8 — 14	6	9	70	19	4	16	80
Total	67	100	379	100	25	100	471

Mayondon

Chi square = 16.64                      d.f. = 4                      p < .01

Batong Malake

Chi square = 46.52                      d.f. = 6                      p < .01\*

Poblacion

Chi square = 1.01                      d.f. = 3                      No S.

Maahas

97 per cent of the household heads think that decision-making in their barrio is democratic.

\* Direction of the relationship is the reverse of what was observed in Mayondon.

TABLE 16. RELATIONSHIP OF LEVEL OF LIVING TO HOUSEHOLD HEAD'S MEMBERSHIP IN FORMAL SOCIAL ORGANIZATIONS (FOUR BARRIOS)

Level of Living Scores	Membership in Formal Social Organizations				Total
	Member		Non-Member		
	Number	Per cent	Per cent	Number	
0 — 4	36	18	615	42	651
5 — 7	37	19	300	20	337
8 — 14	124	63	541	38	665
Total	197	100	1,456	100	1,653

Chi square = 55.05                      d.f. = 2                      p < .01

In the four barrios included in this study only 12 per cent of the household heads are members of formal social organizations. These organizations may be government-sponsored, socio-civic, socio-religious, or professional in nature. An examination of TABLE 16 shows the relationship of level of living to membership in formal social organizations. Eighty-two per cent of those household heads who have high scores (5 to 14) are members while only 58 per cent of those who are non-members have the same scores. These differences in the level of living scores of members and non-members are statistically significant. This observation is a further corroboration of the relationship between status and social participation.

### Summary and Conclusions

This research report has focused on the development of a 14-item scale to measure family level of living in four barrios of Laguna. The utility and value of the resulting scale for predicting other sociological variables was also tested.

Data used in this study were gathered from a complete enumeration of 1,662 household heads in four barrios of Los Baños, Laguna (Maahas, Mayondon, Poblacion, and Batong Malake). The logic of internal consistency was applied in the selection of items from an original battery of 21 items. Five of the high-status items like piano, phonograph, television set, refrigerator, and electric fan were eliminated because only a few or in some cases, none of the households possessed the items. Two other items, stove and bookcase, were not included in the final scale because of the inability to discriminate between those who have high and those who have low level of living scores in Barrio Maahas.

Chi square tests were used to determine the discriminating power of each of the items and phi coefficients were computed to indicate the degree of relationship of each item to the total score. On the basis of these tests, 14 items which have discriminatory power in the four barrios were finally selected. This scale exhibits a high degree of reliability as determined by the split-half method and the application of Spearman-Brown's formula.

To test the predictive value of the scale, the level of living scores were related to other status variables like total family income, expenditures, value of the house, occupation, age, education, of the household head, length of residence in the community, family size, other possessions, type of taxes paid, and leadership status. In general, level of living has positive and statistically significant relationships to practically all of these status variables included in the study. Controlled analysis was done in the case of family size and length of residence in order to examine further the inconsistent trend in relationships in the four barrios.

Level of living scores were also found to have significant relationships to other variables like the household heads' attitudes toward taxation, concepts of the pork barrel, perceptions of factionalization and decision-making processes in their community, and membership in formal social organizations.

Analysis of data in this study yields evidences which demonstrate the possibility of developing a short level of living scale with discriminating power, internal consistency, reliability, and predictive value. However, the scale's applicability to other Philippine barrios particularly outside of Luzon remains to be established.

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