

The Existing Status of the Border-Line Stratum on the Public Relief.

—The Tentative Methodology on the Grasp of the Border-Line and the Actual Status of Amagasaki City. —

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1. Foreword

Every field shows great interest in the study of the Border-Line stratum on the Public Relief, a significant subject both in social security and in sociology. Most of the methodologies so far adopted have been predominated over by economic ones, focused on living expenses. This indicates nothing less than the fact that they succeed conventional ways of learning in the past. For all our intention not to make little of such orthodox methodologies, we can not rest on just following economic approaches alone, in consideration that they are not the only way, especially for those who endeavor to grasp the matter in the actual. It is true, though, that no sociological methodology on this subject has yet established as definite; so that it may well be regarded as an ambitious attempt in a way, with not a little risk, which we now dare to take, and thus we hope for a tentative grasp of the Border-Line stratum from a sociological standpoint.

2. The Method of Stratification

As many scholars have pointed out, the poor stratum has been produced out of the economic structure of capitalistic society and, in this respect, social protection and relief for the poor is a social need strongly demanded as well as a sutural measure against the stated contradiction of economic society. It is noted that the poor stratum, the object of social relief, has been determined in, more or less, different ways by different scholars. B. S. Rowntree divided it further into the first and the second poor class. In Japan actual relief by the Daily Life Security Law extends under such a considerably severer condition that those who evidently belong to the first poor class are not all named the relieved. Hence, it is probable that we can not understand the whole poor class by analysing the living conditions of the relieved by the Daily Life Security Law only, for such a menace as to fall into the Border-Line stratum below the first poor hangs over even those above the second poor. If the

actual relief basis on the Daily Life Security Law be raised, or if the aim of the Law be given more life to, either with a view against poverty, or with a scientific view of the starvation standard of living. they will naturally be provided with the possibility to become the objects of relief. Accordingly, both in applying the Daily Life Security Law and in studying the stratification structure of capitalistic society, such problems as below are seriously required for us to solve. They are where to draw a partition line between the poor and the stable stratum in actual social living, how to decide the dimensions of each smaller stratum, how it changes as time passes on, what kind of cause gives effective influence upon that change, etc. For this purpose, the general understanding of social stratification is indispensable. Now let us begin with the determination of the Border-Line stratum as a central subject, for it is an interesting yet hard stratum for us to grasp the exact conditions, as it is neither applied to the Daily Life Security Law, nor systematized in social activity as one social body. So far few sociological approaches have been made this matter except economic ones, which are based on the analytical method of poverty with living expenses in focus—each family is measured by the minimum sum enough to manage the minimum standard of living set in advance, through investigation into the distribution of household income and expenditure, so that the number of families belonging to the poor may be aggregated. This method needs a premise that each family is homogeneous in consumption structure, in consideration of a social group controlled by the same rule in social economy—a social group on the same socio-economic status. Such a social group is conceived as a stratum in possession of the same socio economic status, living structure and livelihood consciousness. Even in economic approaches they have been making trials to grasp the Border-Line stratum with a sociological respect. Our sociological approach here is limited to the determination of a stratum and its range. The social characters and the analysis of the livelihood structure of the Border-Line stratum will be discussed in another section.

Now in a sociological approach to this stratum, there are two view-points, one of social class theory and the other of social stratification theory. From a theoretical standpoint of social class a class is regarded as an actually existing unit. The sociologically accepted idea considers the conception of a stratum as a group on the standard of similarity in the range of social capacity and the concrete stratum on quantitative similarity is further scaled by combination degree and thus ordered both by subjective factors. Such social strata as is on the Border-Line, on the Primary Poverty Line and on the Secondary Poverty Line etc., however, do not always reveal a perfect interrelation between class consciousness and the degree of poverty, for the strata on the Primary or the Secondary Poverty Line is produced, operatively scaled by researchers. If they be deeply related to a class-existence, they are not the same as that in possession of class consciousness. We may possibly say the same about the Border-Line stratum. In this respect, as far as such a classification is available, the stratum which one tries to grasp substantially is an already established operative one away from the one ordered the class-theoretically. Then another formula can be obtained through researchers' operative stratification. Even though interest in the stratum as the object underlies, the stratum as an actual existence is so closely correlated to the grasping method that it is impossible to discuss it in no relation to the method.

This classification also is put into several standpoints—roughly, quantitative and non-quantitative. In reference to the continuity of a stratum, one is permitted to take up a quantitative method so as to express it as a continuum, if one hopes, while a non-quantitative method treats of the stratum as a non-continuum from the beginning. Further, this quantitative formula is divided into two stratifications—one by a single index and the other by a complex one; the latter has been conceived up to the present more appropriate, a stratum being ordered by several conditions and requisites. It is naturally includes aspects of consciousness so that we can take into consider-

ation that aspect which is laid great stress on from a class-theoretical point of view, if dealing with it properly.

The economic approach, up to this time, to be Border-Line stratum orders it as an operative scale rather than a class. In this study, which gives more importance to the determination of its dimensions than to its characters, it is more appropriate to pursue where the stratum is placed as one scale in continuous stratification structure. For this reason, we will take up a stratification view by a quantitative complex index. Now in such a method out of many as to classify a community by social status, we usually quantify each family's rate, social economic status and class identification consciousness respectively through the rating-judges, measurement of socio-economic status and class identification consciousness, or on the base of family income, educational course, political ability and family rate, etc. Then according to the aggregative we usually make a determination of its social status and then stratify it. In point of fact, even if these indexes are adopted, few attempts have so far made to synthesize the measurements of socio-economic status, class identification consciousness and other indexes. So here we carefully choose indexes with reference to the above. Only it is probable that sometimes the Border-Line stratum by complex indexes coincides with that by single indexes and sometimes does not.

Furthermore, datum points undergo a change on account of whether the society under study is a limited community or a vast mass-society including the former. It is as if micro-organisms and the distance between planets are measured by different unit of length; it is as if microscopic and macroscopic conditions do not always coincide with each other. We, therefore, have to take the range of society in mind. The society under this research is an administrative district called Amagasaki City, on no standard of such a mass-society as Japan.

The above premise on this matter is summarized like the following: that is, an attempt operatively to determine the Border-Line

stratus in Amagasaki City is to be made by choosing complex indexes, not economic single ones, with characters and standards appropriate to Amagasaki City. In the use of these indexes not only economic but fit for the measurements of consciousness and of possessing degree of cultural equipments, we are hoping to order the poor stratum in a somewhat different way from those of the senior scholars. In other words, we endeavor operatively to grasp the stratum through a more sociological than economic measurement, but not through a more sociological than economic measurement, but not through a simple stratification—the stratum provided with latent and manifest conditions in need of relief that we may survey, in Amagasaki City, the so-called unstable in social, cultural, economic civil life, scaled between the lowest (including the relieved) and the high stable both in a social and in a cultural way.

3. The Method of Investigation

For the purpose to order the range and character of the Amagasaki Border-Line stratum, we preliminary picked up, out of the 77,024 families, 770 samples by administrative district through random sampling. Next, we chose 293 families out of these samples with the exception of associate households and one-member families. The actual number of the samples capacitated for this analysis, in fact, dropped to 268, but, its analytical capacity being up to about 95%, we have decided to proceed with this number. Kinds, number of families by the number of house hold staff are as follows.

Population Samples		
Total	No. of Families.....	77,024
	No. of Persons	335,507
Ordinary Household		
	No. of Families	74,600
		268
	One-member Families	3,883
		0
	Two-member Families.....	10,513
		18
	Tree-member Families	13,927
		43
	Four-member Families	15,214
		66

Five-member Families	13,003	46
Six-member Families	9,004	46
Seven-member Families	5,134	24
Eight-member Families	2,495	22
Nine-member Families	1,072	1
More than Ten-member Families	850	2
Associate Households	2,424	0

As the average number of members in a population, m , is 4.44 and its standard deviation σ is 1.86, its variable coefficient becomes 0.42. Thus, the actual capacity of the sample is 0.05

through the next formula $\delta = \varepsilon/m = 1.96 \times \sqrt{\frac{I}{n} - \frac{I}{N}} \times \frac{\sigma}{m}$

Of course it is the capacity of the sample standardized by the number of household staff, not assumed by a complex index. We suppose it worth referring to, though. WE ought to try the Fisher Test on the adaptability of the sample structure, but here we omit it.

Next, we have to add some explanation about the questionnaire. The Research Table consists of a family structure table, Research Sheets I and II. The family structure table contains such items as names of family staff, family relation, sex distinction, age, occupation, educational course and remarks column. Research Sheet I has question items like living conditions, job conditions household expenses, sanitary conditions, social insurance and social welfare, etc. Research Sheet II includes a measurement table of socio-economic status and class identification consciousness. (Note I) Three exponents, the first on household income got from Sheet I, the second on socio-economic status from Sheet II and the last on class identification consciousness, are actually adopted for this investigation. That we may learn the conditions and structure ordering a variety of type on these three bases, we propose to analyse them by such a mathematical operation as the latent structure analysis measurement.

(Note I) Refer to the Research Table.

Research Table

No.

Face-Sheet

Name of Investigator

(The Social Welfare Laboratory)

Date 195

of Kobe College

Name of Family Staff	Family Relation	Sex	Age	Occupation	Education	Remarks
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						

(Note)

* Ask children under compulsory education whether or not they attend school without absence and whether or not they get an educational allowance or any other scholarship. Put down the results in the remarks column.

** To those who have answered they have a job, make sure that they are engaged in the same job at present. Mark O in the column to those who contribute income to household economy and mark X to those who do not.

Research Sheet 1

1. Living Conditions

Q.I. Have you lived in Amagasaki City since before the War or since after the end of the War?

1. Have lived in Amagasaki City since before the War
2. Moved in and out before the War, but have lived constantly in Amagasaki City since the end of the War
3. Had been evacuated for some time, but moved again into Amagasaki City after the War

4. *Moved into Amagasaki City newly after the War*



S.Q. 1. When did you transfer into Amagasaki after the War?

S.Q. 2. Your influx was due:

1. To seeking employment
2. To securing or changing employment
3. To changing or opening trade
4. To chang of post
5. To the settlement of housing difficulty
6. To withdrawal from the place of refuge
7. To attending, leaving or changing school
8. To marriage, divorce, or other alliances
9. To other reasons ()

Q. 2. How long have you lived in your present house?

() years and () months

Q. 3. Have you any trouble with your house?

1. Yes
2. No



S.Q. 1. What trouble?

1. The house is too small (In such a case as mat-rats is the below1.5 for each member
2. Am demanded to evacuate
3. The house rent is too high for my income.
4. The surroundings are not satisfactory.
5. Other troubles (Write concretely)

Q. 4. (Write according to the investigators judgment)

To which of the following does the residence condition of the investigated belong?

1. Unsatisfactory Residential Districts
2. Factory Districts
3. Business Districts

4. Residential Districts
5. Pleasure Resorts
6. Agricultural Districts
7. Other Districts ()

II. The Conditions of Employment

Q. 5. Let me ask a question of you who chiefly support your household economy. Have you an employment that brings any income?

1. Yes

2. No (Ask S.Q.4.)



S.Q. 1. Are you employed? Do you carry on a business?
(Self-supporting or home labor?)

- | | |
|---------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Self-Supporting Enterprises
Those not employed but carrying on a business for the purpose to get income | A. Carry on a business by myself (Including family workers)
B. Employ less than 5 workers
C. Employ more than 5 workers |
| 2. Home Labor
Those engaged in such private occupations as manual or repair works to get income | A. Am engaged in side work subcontracted with wholesale dealers or factories
B. Am engaged in side work from the Occupation House or Side-Work Agency
C. Am engaged in side-work given by neighbors
D. Other works () |

When the investigated person is employed, or hired, a regular employer or a day-laborer

- | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3. Regular Employes
Those employed by firms, government or municipal offices; corporation or others and getting wayes exclusive of day-laborers | A. The workers of the office are less than 5.
B. The workers of the office are less than 10.
C. The workers of the office are less than 20.
D. The workers of the office are less than 50.
E. The workers of the office more than 50. |
| 4. Daily Laborers
Those hired daily or by contract of employment for less than a month | A. The unemployment counter-measure of the Vocational Stabilization Office
B. Other daily labor () |

S.Q. 2. How long have you been engaged in this job

1. Less than a year
2. 2 years to 3 years
3. 3 years to 5 years
4. 5 years to 10 years
5. More than 10 years

S.Q. 3. Where is the place of your employment?

1. Within the limits of the City
2. Within the limits of the prefecture
3. In another prefecture
4. Inconstant

S.Q. 4. Then, are you doing any side work?

1. Yes (Ask Q.5—S.Q. 1: 2)
2. No



S.Q. 5. Why are you not engaged in a job?

1. Can't find any though I am seeking for one
 2. Can't work because I have children and other members to take great care of
 3. Can't work because of sickness or wound
 4. Can't work because of old age
 - * 5. Need not work, for children and other member are working
 6. Need not work, for I have some property
 7. Need not work, for I am supplied money
 8. Other reason ()
- * (In this case, ask why he does not work, though it is almost impossible to get this kind of answer.)

To those who answer No. 1, to No. 5.

S.Q. 6. Then, by what is your household economy supported?

S.Q. 7. How did you leave that job?

since.....years.....months ago

S.Q. 8. What had you been engaged in before them?

Write concretely

S.Q. 9. Why did you leave that job?

1. The closing, suspension and reduction of enterprises
2. Too small income
3. Discharge
4. Disability, sickness or infirmity
- 5- Marriage
6. Old age
7. Other reasons ()

III. Household Economy

Q. 6. Excuse me for asking questions about your income in July

- A. The earned income of your householderYen
- B. The earned income of your family staffYen
- C. The sum given to the household economy from the business incomeYen
- D. The side work incomeYen
- E. The income from your property (means)Yen
- F. The supply from your parents, brothers or relatives.....Yen
- G. The allowance benefits.....Yen
- H. Social insurance benefitsYen
- I. The pension or retiring allowanceYen
- J. Other incomesYen
- TotalYen

* Remarks: Have you got more wages in June than other months because you got a bonus or others this month?

1. Yes (Yen) 2. No

Q. 7. Exclusive of candies, fruits, luxuries such as wine, tobacco, etc., how much do food expenditure occupy your monthly household expenses? What percentage?

Food Expenditure ÷ Household Expenditure = ()
.....

Q. 8. May I ask questions about the items of your living expenses?

Cost of Staple FoodYen
 Cost of Subsidiary Food.....Yen
 Cost of Other Food and Drink.....Yen
 SeasoningYen
 TotalYEN
 Housing ExpensesYen
 Water-Rates, Fuel and Light Expenses
Yen
 Clothing ExpensesYen
 Sanitary ExpensesYen
 Communication Expenses.....Yen
 TotalYEN
 Luxury ExpensesYen
 Share in Change.....Yen
 Cultural and Educational Expenses...Yen
 Recreation ExpensesYen
 Society Expenses.....Yen
 TotalYEN
 AGGREGATIVEYEN

Q. 9. Is your family budget in the black or in the red?

1. In the black 2. Balanced 3. In the red

S. Q. 1. How do you make up for the red? ↓

1. Avail myself of a pawnbroker
 2. Draw or deposit
 3. Barrow money (From who?)
 4. Other Ways (Write in a concrete way)

Q 10. With whom do you consult when you find it very hard to tide over the difficulty in your family budget?
 (O.A.)

Q. 11. When some one of your family gets sick or wounded and needs a great deal of money, how do you manage the

exnsenses?

1. Can manage at our own expenses
2. Ask relatives for support
3. The employer will look after the expense
4. Make use of Health Insurance or other social insurance
5. Other ways ()
6. Undecided

Q. 12. Have you any unpaid wages this month?

1. Yes (Why?)
2. No

IV Sanitation

Q. 13. How many times a month do you have a bath?

1. Less than 5 times 2. Less than 10 times
3. Less than 15 times 4. More then 15 times

Q. 14. How many times do you have your hair cut?

(Ask this of the householder)

(times)

Q. 15. Do you go to a barber's?

1. Go to a barber's
2. Have my hair cut at home 3 Other ways ()

Q. 16. Is there any one silk in your family at present?

*1. Yes (Write the name of the disease.)

2. No

* Q. 1. Are you under medical treatment?

1. Yes (1. Within the City 2. Outside the City)
2. No (Why?)

Q. 17. Is there any one handicapped by deformity, disability, etc?

1. Yes 2. No

IV. Social Insurance and Social Welfare Establishments

Q. 18. There are several systems and establishments for the stabilization and welfare of our livelihood. Check those which you know or have made use of.

Name of Institution	I know	I have made use of	I make use of now
Livelihood Protection Law Relief Law for the Bereaved Families of the War Dead and Wounded Child and Maternal Welfare Law Health Insurance Day Laborers' Health In- surance Welfare Pension Insurance Seamen's Insurance Workmen's Accident Com- pensation Insurance Unemployment Insurance Civic Insurance Postal Annuity Postal Life Insurance Other insurances			

Name of Establishment			
Welfare Office Day Nursery Welfare House Citizens' House (the Kibō- kan) Public Hall The Amagasaki Gakuen Mother's Home Chōan-ryō (Old People's Home) Health Centre Municipal pawn-shops Private pawn-shops Child Consultation Center (in Nishinomiya) The Amagasaki Hospital The Labor Hall Others ()			

Q. 19. When do you hope Amagasaki Municipal administration lays more stress? What field do you think should be reinforced?

1. Social Welfare
2. Hospitals or Health Centers
3. Unemployment Relief Work
4. Counter Measure for Minor Enterprises
5. Counter Measure for Agriculture, Forestry and Fisheries
6. Roads and Rivers
7. Houses
8. Harbors
9. City Buses
10. Water supply and Drainage
11. Repletion of Primary and Middle Schools
12. Complete Equipments of the Police and Fire service
13. Lightseeing and Beatification Enterprises of the City
15. Others ()

Q. 20. The Time-Table for the Housewife

The Forenoon 0 1 2 3 4 5 6 7 8 9 10 11 12

The Afternoon 13 14 15 16 17 18 19 20 21 21 22 23 24

Note Write according to those of week-days except holidays.

Research Sheet II S-E-S

I Houses

1. Building Land (1 Rented room 2. Rented land
3. Landed property
2. House Possession (1. Rented room 2. Rented house
3. Your own house
3. No. of Room ()
4. No. of Mats ()

5. No. of Stories (1. One-storied 2. Two-storied 3 One-storied with a basement 4 Two-storied with a basement)
6. Storehouse (Y N)
7. Kinds of Roof (1. Thatched, Straw-thatchcd, Cryptmeria bark-roofed, zinc-roofed, Boarded, Slated 2 Tile-roofed, Colored tile-roofed)

II Housing Equipments

1. Water Supply (1.No 2 Outdoors 3 Indoors 4 No. of Taps)
2. Kinds of sink (1. No 2 Wooden 3 Galvanized 4 Concreted 5 Tiled)
3. Floor of Kitchen (1. No kitchen 2 ground 3 Concreted 4 Tiled)
4. Gas Equipments (1. No gas 2 Ordinary gas-range 3 gas-range with an oven)
5. Propane-gas Equipments ()
6. Petroleum Furnace ()
7. The Place of Bath-Room (1. No bath 2 Outdoors 3 Indoors)
8. Wash-Place (1. No plar 2. Boarded 3 Concreted 4 Tiled)
9. Kinds of Bath-Tub (1. No tub 2. Round 3 Goemon-styled 4 Square 5 Tiled)
10. Batl-Room Equipments (1. No 2. Having a shower-looth)
11. W.C. (1. No 2. Outdoors 3 Indoors 4 Both outdoors and indoors)

III Furniture

1. Reception Table ()
2. Two-Yard-Sized Cabinet ()
3. One-Yard-Sized- Cabinet
4. Baby Cabinet
5. Wardrobe
6. Cupboard
7. Rectangular Chest
8. Desk

9. Table
10. Revolving Chair
11. Easy Chair
12. Sofa
13. Couch
14. Bed
15. Clog-Box
16. Wall-Clock
17. Table-Clock
18. Bicycle
19. Other Vehicles (1. No 2. Bicycle for Heavy Weight 3. Moto-Bicycle 4. Scooter 5. Auto-Bicycle 6. Auto-Tricycle)
20. Folding Screen
21. Kinds of Electric Lighting (1. No 2. Fixed-Rate Lamp)
22. No. of Electric Lamps ()
23. Lamp Shades ()

IV Cultural Equipments

1. Sewing-Machine
2. Flat-Iron
3. Table-Stand.Lamp
4. Fluorescent Stand Lamp
5. Toaster
6. Electric Heater
7. Mixer
8. Electric Washing Machine
9. Electric Fan
10. Electric Refrigerator
11. Ice-Box
12. Telephone
13. Vacuum Cleaner
14. Meat-Chopper
15. Electric Meat-Chopper
16. Ice-Cream Freezer

V Cultural and Recreation Equipments

1. Radio ()
2. Gramophone (1. No 2. Hand Gramophone 3 Electric Gramophone)
3. Television
4. Camera
5. Mah-jong Pieces
6. Chess Board and Chessmen (Set of Chess)
7. Gobang and Stones (Set of go)
8. Japanese Playing-Cards
9. Trumps
10. Harmonica
11. Harp
12. Organ
13. Piano
14. Mandolin
15. Violin
16. Guitar
17. Samisen
18. Bamboo-Flute
19. Japanese Guitar
20. Other Musical Instruments
21. Daily News-Paper (Y [Name] N)
22. Weekly Magazine (Y [Name] N)
23. Monthly Magazine (Y [Name] N)

IV Luxuries

1. Coarse Tea
2. Barley Tea
3. Black Tea
4. Coffee
5. Cocoa
6. Green Tea
7. Powdered Tea

8. Kalpis
9. Fruit Juice
10. Syrup
11. Cider
12. Beer
13. Wine
14. Honey
15. Sake
16. Distilled Spirits
17. Foreign Drinks

VII Seasoning (Present Equipment)

1. Salt
2. Soy
3. Bean-Mash
4. Sauce
5. Esculent Oil
6. Vinegar
7. Castor-Sugar
8. Lump-Sugar
9. Muscovado (Crude Sugar)
10. Granulated Sugar
11. Mirin (Sweet Sake)
12. Curry-Powder
13. Fat
14. Butter
15. Margarine
16. Jam
17. Marmalade
18. Mayonaise
19. Tomato Ketchup.
20. Bicarbonate of Soda
21. Baking-Powder
22. Bread-Crumb (Dough)

23. Saccharin
24. Seasoning Small Fish
25. Seasoning Tangle
26. Dried Bonito
27. Pepper
28. Cayenne-Pepper
29. Musterd
30. Horse-Radish
31. Ginger
32. Sesame
33. Aji no-Moto
34. Seasoned Laver

VIII Where do you think your family is graded in Amagasaki City from a standpoint of livelihood?

(Show the card and say, "This measure indicates 10 at the top, 5 in the middle and 1 at the bottom. Point out the grade where you suppose it might be," and write the pointed number.)

Grade of Livelihood

Grade of Fortune

Grade of Family Rate

Grade of Occupation

(Of those who have given the answer, All legitimate trades are equally honorable," inquire further

"How do you consider the attitude that people generally think this job graded high and that low?

0	1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	---	----

Low

IV The Results of Aggregative

Before deciding the type of a stratum adaptable for these three indexes, we should, first of all, begin with an operation to determine the type of a stratum based on each index. Now, if the signs + and - indicates the upper and the lower part of each stratum, we can get 2³, 8 status patterns in all, to each of which, therefore, about 34 models are allotted as amount to 268. If we apply, +, ±, - to each index, they come to 3³, 27 status patterns; each gets about 11 models, so few for research that we prefer 8 patterns here. The results in the use of each index are as below.

(1) The Livelihood Standard Exponent

If the quotient of total income divided by protection standard is to be named a living standard exponent, the average, as shown in the next table, comes to be 3.14, similar to the gibra Distribution.

Livelihood Standard Exponents

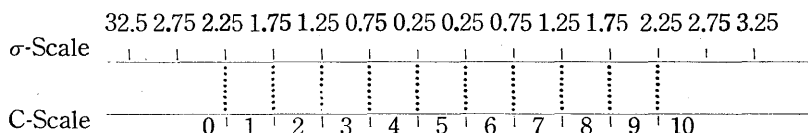
Household Income/Protection Standard

Type	Exponent	%	Cumulation
-	~ 0.9	1.3	1.3
	1.0 ~ 1.4	5.0	6.3
	1.5 ~ 1.9	11.6	17.9
	2.0 ~ 2.4	14.5	32.4
	2.5 ~ 2.9	15.2	47.6
±	3.0 ~ 3.4	15.5	63.1
+	3.5 ~ 3.9	8.2	71.3
	4.0 ~ 4.4	8.1	79.4
	4.5 ~ 4.9	5.4	84.8
	5.0 ~ 5.4	2.7	87.5
	5.5 ~ 5.9	3.0	90.5
	6.0 ~ 6.4	1.5	92.0
	6.5 ~ 6.9	1.5	93.5
	7.0 ~ 7.4	1.3	84.8
	7.5 ~ 7.9	0.8	95.6
	8.0 ~	1.5	97.1
Undecided		2.1	99.3
Average	= 3.1		

(2) The Socio-Economic Stratus

Various attempts so far have been done to measure the socio-economic stratum in a quantitative method. We here compute. Sigma Value through W. H. Swell's quantifying formula and convert it into c-score. In this case all the items prepared for the measurement of the socio-economic stratum do not stand available, a few being omitted according to Goods-Poor Analysis.

If we mark families above the average score 485 with (+) and those below with (-), the former sign possesses 121 families, about 45% and the latter 148, about 55% of all. the investigation into the category, number of families and score value of each item results in the following.



Category, number of families and score value of each item

I 1.					I 4.				
Answer	1	2	3		A	(1~10)	(11~20)	(21~30)	(31~40)
実数	26	119	65			1	2	3	4
f	9.2	67.7	23.1		f	79	148	38	11
%	4.6	33.8	11.6						6
Cumulation %	4.6	43.0	88.4		c	3	5	7	8
-50	-45.4	-7.0	38.4						10
t	-1.69	-0.18	1.19		I 5.				
C scale	2	5	7		A		1	2	3.4
I 2.					f		193	87	2
A	1	2	3		c		4	7	10
f	21	141	114		I 6.				
c	2	4	7		A			1	2
I 3.					f			6	276
A	1	2	3	4	c			10	5
f	19	50	85	55	I 7.				
c	1	3	4	6	A			1	2
				7	f			29	253
				8	c			2	5
				9					

II. 1.

A	1	2	3
f	52	25	205
c	2	4	6

II. 2.

A	1	2	3	4	5
f	40	32	23	159	28
c	2	3	5	6	8

II. 3

A	1	2	3	4
f	28	29	123	102
c	2	3	5	7

II. 4

II. 5

A	1	2	3	4
f	150	12	117	3
c	4	5	5	10

II. 7

A	1	2	3
f	181	12	89
c	4	6	7

II. 8

A	1	2	3	4
f	181	17	65	19
c	4	6	7	9

II. 9

A	1	2	3	4	5
f	181	13	38	45	5
c	4	6	6	8	10

II. 10

A	1	2
f	275	7
c	4	10

II. 11

A	1	2	3	4
f	24	27	228	3
c	2	3	5	10

102

III. 1

A	0	1	2	3
f	143	116	16	7
c	4	6	8	9

III. 2

A	0	1	2	3
f	122	115	35	10
c	3	6	8	9

III. 3

A	0	1	2	3	4
f	153	92	19	14	5
c	4	6	8	8	10

III. 4

A	0	1	2
f	133	113	36
c	4	6	8

III. 5

A	0	1	2
f	142	117	23
c	4	6	8

III. 6

A	0	1	2	3
f	43	176	54	9
c	2	5	7	9

III. 7

A	0	1	2
f	234	36	12
c	5	7	9

III. 8

A	0	1	2	3	4
f	98	128	41	10	5
c	3	5	7	9	10

Ⅲ. 9

A	0	1	2
f	248	28	6
c	5	8	10

Ⅲ. 10

A	0	1	2	3
f	236	24	12	10
c	5	7	8	9

Ⅲ. 11

A	0	1	2	3
f	244	22	11	5
c	5	8	9	10

Ⅲ. 12

A	0	1
f	269	13
c	5	9

Ⅲ. 13

A	0	1
f	267	15
c	5	9

Ⅲ. 14

A	0	1
f	273	9
c	5	9

Ⅲ. 15

A	0	1	2
f	43	188	51
c	2	5	8

Ⅲ. 16

A	0	1	2	3
f	77	186	14	5
c	3	6	8	10

Ⅲ. 17

A	0	1	2	3
f	80	151	39	12
c	3	5	7	9

Ⅲ. 18

A	0	1	2	3
f	103	124	43	12
c	3	5	7	9

Ⅲ. 19

A	1	2
f	261	21
c	5	9

Ⅲ. 20

A	0	1	2
f	202	64	16
c	4	7	9

Ⅲ. 21

A	1	2	3
f	1	26	255
c	0	2	5

Ⅲ. 22

(1~5) (6~10) (11~)

A	1	2	3
f	179	83	20
c	4	7	9

Ⅲ. 23

(1~5)(6~10)(11~)

A	0	1	2	3
f	33	182	57	10
c	2	5	7	9

Ⅵ. 1

A	0	1	2
f	94	171	17
c	3	6	9

VI. 2

A	0	1	2
f	33	213	36
c	2	5	8

VI. 3

A	0	1	2	3
f	121	124	25	12
c	3	6	8	9

VI. 4

A	0	1	2
f	203	65	14
c	4	7	9

VI. 5

A	0	1
f	256	26
c	5	8

VI. 6

A	0	1	2
f	206	69	7
c	4	7	10

VI. 7

A	0	1
f	251	31
c	5	8

VI. 8

A	0	1
f	243	39
c	5	8

VI. 9

A	0	1	2
f	214	59	9
c	4	7	9

VI. 11

A	0	1
f	213	69
c	4	7

VI. 12

A	0	1
f	250	32
c	5	8

VI. 14

A	0	1
f	276	6
c	5	10

V. 1

A	0	1	2	3
f	23	221	30	8
c	2	5	8	9

V. 2

A	1	2	3
f	205	24	53
c	4	6	8

V. 3

A	0	1
f	273	9
c	5	9

V. 4

A	0	1	2
f	190	84	8
c	4	7	9

V. 5

A	1	2
f	25	257
c	9	5

V. 6

A	1	2
f	107	175
c	7	4

V. 7

A	1	2
f	56	226
c	8	5

V. 8

A	1	2
f	42	240
c	8	5

V. 9

A	1	2
f	126	156
c	6	4

V. 10

A		
f	106	176
c	7	4

V. 11

A	1	2
f	9	273
c	9	5

V. 12

A	1	2
f	7	275
c	10	5

V. 13

A	1	2
f	6	276
c	10	5

V. 15

A	1	2
f	6	276
c	10	5

V. 16

A	1	2
f	14	268
c	9	5

V. 17

A	1	2
f	18	264
c	9	5

V. 18

A	1	2
f	9	273
c	9	5

V. 21

A	1	2
f	267	15
c	5	1

V. 22

A	1	2
f	85	197
c	7	4

V 33

A	1	2
f	116	166
c	7	4

IV. 1

A	1	2
f	260	22
c	5	1

IV. 2

A	1	2
f	90	192
c	7	4

IV. 3

A	1	2
f	131	151
c	6	5

% . 4

A	1	2
f	85	197
c	7	4

IV. 5

A	1	2
f	66	216
c	7	4

IV. 6

A	1	2
f	58	224
c	8	4

IV. 7

A	1	2
f	32	250
c	8	5

IV. 8

A	1	2
f	41	241
c	8	5

IV. 9

A	1	2
f	62	220
c	7	4

IV. 10

A	1	2
f	29	253
c	8	5

IV. 11

A	1	2
f	57	225
c	8	4

VI. 12

A	1	2
f	70	212
c	7	4

IV. 13

A	1	2
f	44	238
c	8	5

IV. 14

A	1	2
f	14	268
c	9	5

IV. 15

A	1	2
f	92	190
c	7	4

IV. 16

A	1	2
f	16	266
c	9	5

IV. 17

A	1	2
f	29	253
c	8	5

VII. 3

A	1	2
f	253	29
c	5	2

VII. 4

A	1	2
f	266	16
c	5	1

VII. 5

A	1	2
f	262	20
c	5	1

VII. 6

A	1	2
f	275	7
c	5	1

VII. 7

A	1	2
f	263	19
c	5	1

VII. 8

A	1	2
f	83	199
c	7	4

VII. 9

A	1	2
f	29	253
c	8	5

VII. 10

A	1	2
f	54	228
c	8	5

VII. 11

A	1	2
f	42	240
c	8	5

VII. 12

A	1	2
f	225	57
c	6	2

VII. 13

A	1	2
f	44	238
c	8	5

VII. 14

A	1	2
f	190	92
c	6	3

VII. 15

A	1	2
f	149	133
c	6	4

VII. 16

A	1	2
f	49	233
c	8	5

VII. 17

A	1	2
f	19	263
c	9	5

VII. 18

A	1	2
f	124	158
c	7	4

VII. 19

A	1	2
f	113	169
c	7	4

VII. 20

A	1	2
f	149	133
c	6	4

VII. 21

A	1	2
f	86	196
c	7	4

VII. 22

A	1	2
f	138	144
c	6	4

VII. 23

A	1	2
f	94	188
c	7	4

VII. 24

A	1	2
f	248	34
c	5	2

VII. 25

A	1	2
f	181	101
c	6	3

VII. 26

A	1	2
f	214	68
c	6	3

VII. 27

A	1	2
f	192	90
c	6	3

VII. 28

A	1	2
f	128	154
c	6	4

VII. 29

A	1	2
f	85	197
c	7	4

VII. 30

A	1	2
f	113	169
c	7	4

VII. 31

A	1	2
f	136	146
c	6	4

VII. 32

A	1	2
f	234	48
c	5	2

VII. 33

A	1	2
f	246	36
c	5	2

VII. 34

A	1	2
f	106	176
c	7	4

(Note)

* Date for the Determination of the Items to Be Eliminated from in Advance.

In a preced for testing the adoptability of each item according to good-poor analysis, the two-ford table of the item results as in Table I.

T. 1

	1. yes	2. no	
upper class	a	c	m
lower class	b	d	m
	a+d	c+d	

In the case $c=0$ (which means all answer favorably) in the upper class and $b=0$ (which means all answer unfavoralby) in the lower class, the difference is the greatest.

When in a certain item, the Category 2 (Answer No) frequency is expressed as X , we get table 2.

T. 2		1. yes	2. no	
	upper class	m	o	m
	lower class	m-x	x	m
		2m-x	x	N(=2m)

When we let $c=0$ in the upper class, $d=x$ in the lower, the next formula comes out.

$$X^2_c = \frac{N \cdot (mx - \frac{N^2}{2})}{(2m-x)X \cdot m^2} \quad (0 < X < m)$$

T. 3		1. yes	2. no	
	upper class	70	o	70
	lower class	70-x	x	70
		140-x	x	140

When X^2 denies no such hypothesis that there may be zero difference between, its minimum value becomes 3.841 in $df=1$.

When we let $m = \frac{282}{4}$, it goes like this

$$X^2_c = \frac{140(70X - (70-X) \times 0 - \frac{140}{2})^2}{(140-X) \times X \times 70^2}$$

The maximum value of X^2 in the above can be obtainable by our solving the next equation.

Thus the positive numeral value of X is decided as 5.

T. 4		1. yes	2. no	
	upper class	70	0	70
	lower class	65	5	70
		135	5	

$$\chi^2 = 3.32 < \chi^2(9.05) = 3.841 \quad (\chi = 5)$$

$$\chi^2 = 4.3 > \chi^2(0.05) = 3.841 \quad (\chi = 6)$$

The greatest difference between the upper and the lower class is shown in $X=5$ as far as no consciousness of difference is not produced. It is also the Category 2 frequency in T. 2. Consequently

its not essential to separate the upper from the lower class, when less than, 5 of all belong to Category 2 (in the twofold distribution method), and thus, χ^2 concretely be comes below 3.32 (in the T 4 form), evidently with no capability to have difference between. We may eliminate such items from item groups without any trouble to examine each.

1. II 6

2. VI 10

3. VI 13.

4. VI 15.

5. VI 16.

6. V 14.

7. V 19.

8. V 20.

9. VII 1.

10. VII 2.

** Good Poor Analysis

I. 1

	1	2	3
U	1	36	33
L	19	47	4
	20	83	37

$$x^2=40.36 \quad df=2$$

I. 2

	1	2	3
U	1	21	48
L	20	33	17
	21	54	68

$$x^2=34.68 \quad df=2$$

I. 3

	1	2	3	4	5	6	7
U	1	3	9	14	15	13	15
L	12	23	26	4	5	0	0
	13	26	35	18	20	13	15

$$x^2=71.44 \quad df=6$$

I. 4

	1	2	3	4	5
U	3	33	20	9	5
L	39	29	2	0	0
	42	62	22	9	5

$$x^2=59.80 \quad dx=4$$

I. 5

	1	2
U	32	38
L	57	13
	89	51

$$x^2=19.3 \quad df=1$$

I. 6

	1	2
U	2	68
L	1	69
	3	137

$$x^2 = \frac{140 \times (69 \times 2 - 68 - \frac{140}{2})^2}{70 \times 70 \times 3 \times 137} = 0$$

$$df=1$$

II. 7

	1	2
U	5	65
L	9	61
	14	126

$$x^2=19.95 \quad df=1$$

II. 1

	1	2	3
U	2	2	64
L	29	13	28
	34	14	92

$$x^2=41.28 \quad df=2$$

II. 2

	1	2	3	4	5
U	8	6	4	40	17
L	27	14	11	17	1
	30	20	15	57	18

$$x^2=49.12 \quad df=4$$

II. 3

	1	2	3	4
U	3	4	24	39
L	18	13	28	11
	21	17	52	50

$$x^2=31.40 \quad df=3$$

II. 4 II. 5(2)

	1	2	3	4
U	16	5	46	3
L	60	0	10	0
	76	5	56	3

$$x^2=56.60 \quad df=3$$

II. 7

	1	2	3
U	19	3	48
L	64	1	5
	83	4	53

$$x^2=60.28 \quad df=2$$

II. 8

	1	2	3	4
U	19	8	25	18
L	64	1	5	0
	83	9	30	18

$$x^2=45.87 \quad df=3$$

II. 9

	1	2	3	4	5	
U	19	6	15	26	4	70
L	64	1	4	1	0	70
	83	7	19	27	4	

$x^2=46.08$ $df=4$

II. 11

	1	2	3	4	
U	3	4	62	1	70
L	14	10	45	1	70
	17	14	107	2	

$x^2=12.36$ $df=3$

III. 2

	0	1	2	3	
U	24	25	13	8	70
L	43	26	1	0	70
	67	51	14	8	

$x^2=23.64$ $pf=3$

III. 4

	0	1	2	
U	20	30	20	70
L	51	19	0	70
	71	49	20	

$P^2=36.00$ $df=2$

III. 6

	0	1	2	3	
U	6	34	22	8	70
L	21	47	2	0	70
	27	81	24	8	

$x^2=35.08$ $df=3$

III. 8

	0	1	2	3	4	
—	14	26	20	7	3	70
—	44	23	3	0	0	70
	58	49	23	7	3	

$x^2=38.20$ $df=4$

III. 10

	0	1	2	3	
U	45	11	5	9	70
L	69	1	0	0	70
	114	12	5	9	

$x^2=27.36$ $df=3$

II. 10

	1	2	
U	46	6	70
L	70	0	70
	134	6	

$x^2=4.35$ $df=1$

III. 1

	0	1	2	3	
U	16	37	11	6	70
L	57	13	0	0	70
	73	50	11	6	

$x^2=51.52$ $df=3$

III. 3

	0	1	2	3	4	
U	24	24	10	9	3	70
L	50	19	0	1	0	70
	74	43	10	10	3	

$x^2=29.12$ $df=4$

III. 5

	0	1	2	
U	11	44	15	70
L	58	12	0	70
	69	56	15	

$x^2=62.58$ $df=2$

III. 7

	0	1	2	
U	46	17	7	70
=	69	1	0	70
	114	18	7	

$x^2=25.84$ $df=2$

III. 9

	0	1	2	
U	45	19	6	70
L	68	2	0	70
	113	21	6	

$x^2=24.44$ $df=2$

III. 11

	0	1	2	3	
U	51	9	6	4	70
L	67	3	0	0	70
	118	12	6	4	

$x^2=15.17$ $df=3$

III. 12

	0	1	
U	58	12	70
L	70	0	70
	128	12	

$$x^2=11.0 \quad df=1$$

III. 13

	0	1	
U	61	9	70
=	70	0	70
	131	9	

$$x^2=7.60 \quad df=1$$

III. 14

	0	1	
U	64	6	70
L	62	1	70
	133	7	

$$x^2=.24 \quad df=1$$

III. 15

	0	1	2	
I	2	44	24	70
L	31	38	1	70
	33	82	25	

$$x^2=47.08 \quad df=2$$

III. 16

	0	1	2	3	
U	8	48	9	5	70
=	36	34	0	0	70
	44	82	9	4	

$$xn=43.16 \quad df=3$$

III. 17

	0	1	2	3	
U	7	30	21	12	70
L	37	31	2	0	70
	44	61	23	12	

$$x^2=48.12 \quad df=3$$

III. 18

	0	1	2	3	
U	17	32	14	7	70
L	44	19	7	0	70
	61	51	21	7	

$$x^2=24.52 \quad df=3$$

III. 19

	1	2	
U	59	11	70
L	68	2	70
	127	13	

$$x^2=5.42 \quad df=1$$

III. 20

	0	1	2	
U	32	26	12	70
L	68	1	1	70
	100	27	13	

$$x^2=45.40 \quad df=2$$

III. 21

	1	2	3	
U	0	0	70	70
L	1	21	48	70
	1	21	118	

$$x^2=26.08 \quad df=2$$

III. 22

	0	1	2	3	
U	0	14	42	14	70
L	2	64	3	1	70
	2	78	45	15	

$$x^2=79.08 \quad df=3$$

III. 23

	0	1	2	3	
U	4	19	36	11	70
L	18	51	1	0	70
	22	70	37	11	

$$x^2=67.56 \quad df=3$$

IV. 1

	0	1	2	
U	6	53	11	70
L	50	20	0	70
	56	73	11	

$$x^2=60.48 \quad df=1$$

IV. 2

	0	1	2	
U	0	46	24	70
L	28	40	2	70
	28	86	26	

$$x^2=47.04 \quad df=1$$

IV. 3

	0	1	2	3	
U	14	32	14	10	70
L	52	18	0	0	70
	66	50	14	10	

$$x^2=49.00 \quad df=3$$

IV. 4

	0	1	2	
U	31	30	9	70
L	67	1	2	70
	98	31	11	

$$x^2=61.72 \quad df=2$$

IV. 5

	0	1	
U	53	12	70
L	70	0	70
	123	17	

$$x^2=17.1 \quad df=1$$

IV. 6

	0	1	2	
U	32	32	6	70
L	66	4	0	70
	98	36	6	

$$x^2=55.22 \quad df=2$$

V. 7

	0	1	
U	51	19	70
L	69	1	70
	120	20	

$$x^2=168.6 \quad df=1$$

V. 8

	0	1	
U	42	28	70
L	70	0	70
	112	28	

$$x^2=130.2 \quad df=1$$

V. 9

	0	1	2	
U	26	36	8	70
L	69	1	0	70
	95	37	8	

$$x^2=61.56 \quad df=2$$

IV. 1

	0	1	
U	29	41	70
L	69	1	70
	98	42	

$$x^2=49.1 \quad df=1$$

IV. 12

	0	1	
U	47	23	70
L	67	3	70
	114	26	

$$x^2=15.4 \quad df=1$$

× IV. 14

	0	1	
U	65	5	70
L	70	0	70
	135	5	

V. 1

	0	1	2	3	
U	2	43	18	7	70
L	17	53	0	0	70
	19	96	18	7	

$$x^2=37.88 \quad df=3$$

V. 2

	1	2	3	
U	28	11	31	70
L	61	6	3	70
	89	17	34	

$$x^2=36.76 \quad df=2$$

V. 3

	0	1	
U	63	7	70
L	70	0	70
	133	7	

$$x^2=5.41 \quad df=1$$

V. 4

	0	1	2	
U	25	39	6	70
L	62	8	0	70
	87	47	6	

$$x^2=42.16 \quad df=2$$

V. 5

	1	2	
U	17	53	70
L	0	70	70
	17	123	

$$x^2=17.1 \quad df=1$$

V. 6

	1	2	
U	44	26	70
L	12	58	70
	56	84	

$$x^2=42.7 \quad df=1$$

V. 7

	1	2	
U	29	41	70
L	2	68	70
	31	109	

$$x^2=28.0 \quad df=1$$

V. 8

	1	2	
U	22	48	70
L	1	69	70
	23	117	

$$x^2=20.8 \quad df=1$$

V. 9

	1	2	
U	57	13	70
L	7	63	70
	64	76	

$$x^2=72.0 \quad df=1$$

V. 10

	1	2	
U	41	29	70
L	10	60	70
	51	89	

$$x^2=29.5 \quad df=1$$

V. 11

	1	2	
U	8	62	70
L	0	70	70
	8	132	

$$x^2=6.5 \quad df=1$$

× V. 12

	1	2
U	5	65
L	0	70
	5	135

Out

V. 13

	1	2
U	4	66
L	1	69
	5	135

$x^2=0.83$ $df=1$

× V. 15

	1	2
U	5	65
L	0	70
	5	135

Out

× V. 16

	1	2
U	7	63
L	2	68
	9	131

$x^2=1.95$ $df=1$

V. 17

	1	2
U	38	32
L	4	66
	42	98

$x^2=87.2$ $df=1$

V. 18

	1	2
U	7	63
L	0	70
	7	133

$x^2=5.31$ $df=1$

V. 21

	1	2
U	70	0
L	59	11
	129	11

$x^2=9.87$ $df=1$

V. 22

	1	2
U	38	32
L	4	66
	42	98

$x^2=37.0$ $df=1$

V. 23

	1	2
U	52	18
L	7	63
	59	81

$x^2=59.3$ $df=1$

× VI. 1

	1	2
U	65	5
L	64	6
	129	11

$$x^2 = \frac{140 \times (65 \times 6 - 64 \times 5 - 70)^2}{129 \times 11 \times 70 \times 70} = 0$$

$df=1$

VI. 14

	1	2
U	14	56
L	0	70
	14	126

$x^2=13.4$ $df=1$

VI. 15

	1	2
U	33	37
L	16	54
	49	91

$x^2=10.8$ $df=1$

× VI. 16

	1	2
U	8	62
L	4	66
	12	128

$x^2=0.82$ $df=1$

VI. 17

	1	2
U	21	49
L	0	70
	21	119

$x^2=22.4$ $df=1$

VI. 3

	1	2
U	69	1
L	49	21
	118	22

$x^2=19.5$ $df=1$

VI. 4

	1	2
U	69	1
L	53	17
	122	18

$x^2=17.9$ $df=1$

VI. 5

	1	2
U	70	0
L	40	30
	110	30

$x^2=35.7$ $df=1$

× VI. 6

	1	2
U	70	0
L	65	5
	135	5

Out

VI. 7

	1	2
U	68	2
L	55	15
	123	17

$x^2=9.6$ $pf=1$

VII. 8

	1	2
	49	21
—	4	66
	53	87

$x^2=58.8 \quad df=1$

VII. 9

	1	2
70 U	13	57
70 L	5	65
	18	122

$x^2=5.7 \quad df=1$

VII. 10

	1	2
70 U	24	46
70 L	3	67
	27	115

$x^2=18.5 \quad df=1$

VII. 11

	1	2
U	27	43
—	2	68
	29	111

$x^2=25.0 \quad df=1$

VII. 12

	1	2
70 U	70	0
70 L	39	31
	109	31

$x^2=57.3 \quad df=1$

VII. 13

	1	2
70 U	26	44
70 L	5	65
	31	109

$x^2=16.6 \quad df=1$

VII. 14

	1	2
U	61	9
L	22	48
	83	57

$x^2=45.0 \quad df=1$

VII. 15

	1	2
70 U	44	26
70 L	20	50
	64	76

$x^2=1. \quad df=166$

VII. 16

	1	2
70 U	33	37
70 L	6	64
	39	101

$x^2=25.9 \quad df=1$

VII. 17

	1	2
U	14	56
L	0	70
	14	126

$x^2=13. \quad 4df=1$

VII. 18

	1	2
70 U	61	9
70 S	5	65
	66	74

$x^2=86.7 \quad df=1$

VII. 19

	1	2
70 U	55	15
70 L	6	94
	61	79

$x^2=69.7 \quad df=1$

VII. 20

	1	2
U	55	15
L	14	56
	69	71

$x^2=48.0 \quad df=1$

VII. 21

	1	2
70 U	34	36
70 L	8	62
	42	98

$x^2=22.9 \quad df=1$

VII. 22

	1	2
70 U	59	11
70 L	10	60
	69	71

$x^2=68.6 \quad df=1$

VII. 23

	1	2
U	32	38
L	19	51
	51	89

$x^2=2.2 \quad df=1$

VII. 24

	1	2
70 U	67	3
70 L	52	18
	119	21

$x^2=10.9 \quad df=1$

VII. 25

	1	2
70 U	66	4
70 L	19	51
	85	55

$x^2=63.3 \quad df=1$

VII. 26

	1	2
U	68	2
L	37	33
	105	35

$x^2=34.3 \quad df=1$

VII. 27

	1	2
70 U	66	4
70 L	18	52
	84	56

$x^2=37.8 \quad df=1$

VII. 28

	1	2
70 U	45	25
70 L	19	51
	64	76

$x^2=34.4 \quad df=1$

VI. 2

	1	2
U	39	31
L	6	64
	45	95

$$x^2=35.6 \quad df=1$$

VI. 3

	1	2
U	58	12
L	6	64
	64	76

$$x^2=77.8 \quad df=1$$

VI. 4

	1	2
U	50	20
L	3	67
	53	87

$$x^2=64.2 \quad df=1$$

VI. 5

	1	2
U	37	33
L	1	69
	38	102

$$x^2=44.2 \quad df=1$$

VI. 6

	1	2
U	30	40
L	2	68
	32	108

$$x^2=29.5 \quad df=1$$

VI. 7

	1	2
U	23	47
L	0	70
	23	117

$$x^2=25.2 \quad df=1$$

VI. 8

	1	2
U	28	42
L	1	69
	29	111

$$x^2=29.4 \quad df=1$$

VI. 9

	1	2
U	23	47
L	2	68
	25	115

$$x^2=19.5 \quad df=1$$

VI. 10

	1	2
U	23	47
L	1	69
	24	116

$$x^2=25.2 \quad df=1$$

VI. 11

	1	2
U	33	37
L	3	67
	36	104

$$x^2=31.4 \quad df=1$$

VI. 12

	1	2
U	35	35
L	3	67
	38	102

$$x^2=33.1 \quad df=1$$

VI. 13

	1	2
U	26	44
L	2	68
	28	112

$$x^2=23.6 \quad df=1$$

VII. 29

	1	2
U	43	27
L	6	64
	49	91

$$x^2=31.4 \quad df=1$$

VII. 30

	1	2
U	48	22
L	7	63
	55	85

$$x^2=50.3 \quad df=1$$

VII. 31

	1	2
U	52	18
L	15	55
	67	73

$$x^2=49.8 \quad df=1$$

VII. 32

	1	2
U	68	2
L	40	30
	128	32

$$x^2=51.4 \quad df=1$$

VII. 33

	1	2
U	70	0
L	37	33
	107	33

$$x^2=40.6 \quad df=1$$

VII. 34

	1	2
U	47	23
L	7	63
	54	86

$$x^2=48.2 \quad df=1$$

(3) Class Identification Consciousness

We here apply latent structure analysis to responses on the four items-livelihood, fortune, family rate and occupation. (Note 3)

Items on Class Identification Consciousness and Response Frequency and Determinative Criteria of Response Type.

Choice Items	Lower Class					Upper Class					Total		
	DK	0	1	2	3	4	5	6	7	8		9	10
Q. 1 Livelihood	12	5	322	36	35		125	17	17	8	0	0	282
Q. 2 Fortune	16	55	27	29	38	22	69	7	12	6	0	1	282
Q. 3 Family Rate	19	13	3	18	28	24	111	15	19	16	5	11	282
Q. 4 Occupation	11	3	11	10	15	27	123	22	28	19	7	6	282
Determinative Criteria of Response Type	-						+						
	latent class II						latent class I						

We explain it like this Presuming that latent classes are counted 2, We mark the group conscious of its belonging to the upper class with Latent Class I (+) and the lower write Latent Class II (-) In this way, out of the 282 models, 138.7 (about 48.5%) are included in Latent Class I and 145.3 (about 51.5%) in Latent Class II (note 4). analytic capacity amounts up to 93.15% and the χ^2 test of adaptability by Fishers method results in $0.5 > P > 0.3$ in $df=8$, capable of substantial analysis. (Note 4) We might well, then classify classes above the ninth + - + - type generally as + type and those below the tenth - - + + type generally as -type (Note 5) that identifies a group belonging to Latent Class 1, this a group to Latent Class II, 142 models (about 53%) are scaled into the + type and 126 (about 47%) into the - type.

(Note 3)

The measurement of Latent Structure Analysis

1 About Signs:

N The total number of models

n_i The No. of models which show + response in the i th item

n_{ij} The No of models which show + response both in the i th and j th items

n_{ijk} The No. of models that show + response in the i th, j th and k th items

[ij] Response relation between the i th and the j th item.

S_i The geometric average of the i th item. You may think it as the theoretical value of the i th item.

$\left. \begin{matrix} U \\ K \\ T \end{matrix} \right\}$ Subsidiary Variables

$$P_i \quad P_i = \frac{N_i}{n}$$

N_I Latent Class I — a latent class with a positive attitude.

N_{II} Latent Class II $n_{II} = n - n_I$

P_I The probability of + response of a group belonging to Latent Class I in the i th item. Latent marginals of the item.

P_{II} The probability of + response of a group belonging to Latent Class II in the i th item.

Manifest Data of Four Items on Class Identification Consciousness

1	2	3	4		<i>nij</i>	<i>f</i>
+	+	+	+	45	<i>n</i> 1	167
+	+	+	-	35	<i>n</i> 2	95
+	+	-	+	1	<i>n</i> 3	177
+	-	+	+	18	<i>n</i> 4	83
-	+	+	+	3	<i>n</i> 12	86
+	+	-	-	5	<i>n</i> 13	134
+	-	+	-	36	<i>n</i> 14	70
+	-	-	+	6	<i>n</i> 23	89
-	+	-	+	6	<i>n</i> 24	49
-	+	+	-	6	<i>n</i> 34	72
-	-	+	+	6	<i>n</i> 123	80
+	-	-	-	21	<i>n</i> 124	46
-	+	-	-	0	<i>n</i> 134	63
-	-	+	-	28	<i>n</i> 234	48
-	-	-	+	4	<i>n</i> 1234	45
-	-	-	-	68		

282

Latent Structurer Analysis of Class Identification Consciousness

$n=282$

$n^2=79.524$

$$[it] = nnij - ninj$$

$$[12] = 282 \times 86 - 169 \times 95 = 24.252 - 15.865 = 8.287$$

$$[13] = 282 \times 134 - 167 \times 177 = 37.788 - 29.559 = 8.229$$

$$[14] = 282 \times 70 - 167 \times 83 = 19.740 - 13.861 = 5.879$$

$$[23] = 282 \times 89 - 95 \times 177 = 25.098 - 16.815 = 8.283$$

$$[24] = 282 \times 49 - 95 \times 83 = 13.818 - 7.885 = 5.933$$

$$[34] = 282 \times 72 - 177 \times 83 = 20.304 - 14.691 = 5.613$$

$\log s[ij]$

$[ij]/n^2$

$S_i S_j$

3,923607

.105465

.106707

3,915347

.103478

.102808

3,769304

.073927

.073544

3,918188

.104157

.103617

3,773274

.074606

.074123

3,749195

.070582

.071414

$$\log S_j = \frac{1}{m-1} \sum \log[ij] - \frac{1}{m-1} \times \frac{1}{m-2} \sum \sum \log[ik] - \log u$$

$$\begin{aligned} \log s_1 &= \frac{1}{8}(3,923607 + 3,915347 + 3,769304) - \frac{1}{8}(3,918188 + 3,773274 \\ &\quad + 3,749195) - 2,450249 \\ &= \frac{1}{8}(11,608258) - \frac{1}{8}(11,440657) - 2,450249 \\ &= 3,869419 - 1,906776 - 2,450249 = 1,512394 \\ s_1 &= .325383 \end{aligned}$$

$$\begin{aligned} \log s_2 &= \frac{1}{8}(3,923607 + 3,918188 + 3,773274) - \frac{1}{8}(3,915347 + 3,769304 \\ &\quad + 3,79195) - 2,450249 \\ &= \frac{1}{8}(11,615069) - \frac{1}{8}(11,433846) - 2,450249 \\ &= 3,871690 - 1,905641 - 2,450249 = 1,515800 \\ s_2 &= .327944 \end{aligned}$$

$$\begin{aligned} \log s_3 &= \frac{1}{8}(3,915347 + 3,918188 + 3,749195) - \frac{1}{8}(3,923607 + 3,769304 \\ &\quad + 3,773274) - 2,450248 \\ &= \frac{1}{8}(11,582730) - \frac{1}{8}(11,466185) - 2,450249 \\ &= 3,860910 - 1,911031 - 2,450249 = 1,499630 \\ s_3 &= .315959 \end{aligned}$$

$$\begin{aligned} \log s_4 &= \frac{1}{8}(3,799304 + 3,773274 + 3,749195) - \frac{1}{8}(3,923607 \\ &\quad + 3,915347 + 3,918188) - 2,450249 \\ &= \frac{1}{8}(11,291773) - \frac{1}{8}(11,757142) - 2,450249 \\ s_4 &= .226022 \end{aligned}$$

$[\mu]$

$$\mu_i = \frac{[jk; i]}{[jk]} \quad [jk; i] = n_{ijk} n_i - n_{ij} n_{ik}$$

$[ijk]$

$$\begin{aligned} [23; 1] &= n_{123} n_1 - n_{12} n_{13} \\ &= 80 \times 167 - 86 \times 134 = 13360 - 11524 = 1836 \end{aligned}$$

$$\begin{aligned} [13; 2] &= n_{123} n_2 - n_{12} n_{23} \\ &= 80 \times 95 - 86 \times 89 = 7600 - 7654 = -54 \end{aligned}$$

$$\begin{aligned} [12; 3] &= n_{123} n_3 - n_{13} n_{23} \\ &= 80 \times 177 - 134 \times 89 = 14160 - 11926 = 2234 \end{aligned}$$

$$\begin{aligned} [24; 1] &= n_{124} n_1 - n_{12} n_{14} \\ &= 46 \times 167 - 86 \times 70 = 7682 - 6020 = 1662 \end{aligned}$$

$$\begin{aligned} [24; 2] &= n_{124} n_2 - n_{12} n_{24} \\ &= 46 \times 95 - 86 \times 49 = 4370 - 4214 = 156 \end{aligned}$$

$$\begin{aligned}
[12; 4] &= n_{124} n_4 - n_{14} n_{24} \\
&= 46 \times 83 - 70 \times 49 = 3818 - 3430 = 388 \\
[34; 1] &= n_{134} n_1 - n_{13} n_{14} \\
&= 63 \times 167 - 134 \times 70 = 10521 - 9380 = 1141 \\
[14; 3] &= n_{134} n_3 - n_{13} n_{34} \\
&= 63 \times 177 - 134 \times 72 = 11151 - 9648 = 1503 \\
[13; 4] &= n_{134} n_4 - n_{14} n_{34} \\
&= 63 \times 83 - 70 \times 72 = 5229 - 5040 = 189 \\
[34; 2] &= n_{234} n_2 - n_{24} \\
&= 38 \times 95 - 89 \times 49 = 4560 - 4361 = 199 \\
[24; 3] &= n_{234} n_3 - n_{23} n_{34} \\
&= 48 \times 177 - 89 \times 72 = 8496 - 6408 = 2088 \\
[22; 4] &= n_{234} n_4 - n_{24} n_{34} \\
&= 48 \times 83 - 49 \times 72 = 3984 - 3528 = 456
\end{aligned}$$

[123]

$$\begin{aligned}
\mu_1 &= \frac{[23; 1]}{[23]} = \frac{1836}{8283} = .221659 \\
\mu_2 &= \frac{[13; 2]}{[13]} = \frac{-54}{8229} = -.006562 \\
\mu_3 &= \frac{[12; 3]}{[12]} = \frac{2234}{8387} = .266365
\end{aligned}$$

[124]

$$\begin{aligned}
\mu_1 &= \frac{[24; 1]}{[24]} = \frac{1662}{5933} = .280128 \\
\mu_2 &= \frac{[14; 2]}{[14]} = \frac{156}{5879} = .026535 \\
\mu_4 &= \frac{[12; 4]}{[12]} = \frac{388}{8387} = .046262
\end{aligned}$$

[134]

$$\begin{aligned}
\mu_1 &= \frac{[34; 1]}{[34]} = \frac{1141}{5613} = .203278 \\
\mu_3 &= \frac{[14; 3]}{[14]} = \frac{1503}{5878} = .255656 \\
\mu_4 &= \frac{[13; 4]}{[13]} = \frac{189}{8229} = .022968
\end{aligned}$$

[234]

$$\mu_2 = \frac{[34; 2]}{[34]} = \frac{199}{5613} = .035453$$

$$\mu_3 = \frac{[24; 3]}{[24]} = \frac{2088}{5933} = .351930$$

$$\mu_4 = \frac{[23; 4]}{[23]} = \frac{456}{8283} = .055053$$

$$\mu_1 = \frac{(.221659 + .280128 + .203278)}{3} = \frac{.705065}{3} = .235022$$

$$\mu_2 = \frac{(-.006562 + .026535 + 0.35453)}{3} = \frac{.055426}{3} = .018475$$

$$\mu_3 = \frac{(.266365 + .255656 + .351930)}{3} = \frac{.87395}{3} = .291317$$

$$\mu_4 = \frac{(.046262 + .022968 + .055053)}{3} = \frac{.124283}{3} = .041428$$

$$P_1 = \frac{n_1}{n} = \frac{162}{282} = .5745$$

$$P_2 = \frac{n_2}{n} = \frac{95}{282} = .3369$$

$$P_3 = \frac{n_3}{n} = \frac{177}{282} = .6277$$

$$P_4 = \frac{n_4}{n} = \frac{83}{282} = .2943$$

$$[K] \quad k_i = \frac{S_i}{P_i} - \frac{P_i}{S_i} + \frac{\mu_i}{s_i P_i}$$

$$\begin{aligned} k_1 &= \frac{s_1}{P_1} = \frac{P_1}{s_1} + \frac{\mu_1}{P_1 s_1} \\ &= \frac{.325383}{.5745} - \frac{.5745}{.325383} + \frac{.235022}{.5745 \times .325383} \\ &\quad (.186933) \\ &= .566376 - 1.765612 + 1.257253 = .058017 \end{aligned}$$

$$\begin{aligned} k_2 &= \frac{s_2}{P_2} - \frac{P_2}{s_2} + \frac{\mu_2}{P_2 s_2} \\ &= \frac{.327944}{.3369} - \frac{.3369}{.327944} + \frac{.018475}{.3369 \times .327944} \\ &\quad (.110484) \\ &= .973416 - 1.027310 + .167219 = .113325 \end{aligned}$$

$$\begin{aligned} k_3 &= \frac{s_3}{P_3} - \frac{P_3}{s_3} + \frac{\mu_3}{P_3 s_3} \\ &= \frac{.315959}{.6277} - \frac{.6277}{.315959} + \frac{.291317}{.6277 \times .315959} \\ &\quad (.198327) \\ &= .503360 - 1.986650 + 1.468872 = .014418 \end{aligned}$$

$$\begin{aligned}
 k_4 &= \frac{s_4}{P_4} - \frac{P_4}{s_4} + \frac{\mu_4}{P_4 s_4} \\
 &= \frac{.226022}{.2943} - \frac{.2943}{.226022} + \frac{.041428}{.2943 \times .226022} \\
 &\quad (.0665183) \\
 &= .767999 - 1.302076 + .622809 = .088722
 \end{aligned}$$

$$k = .061411$$

$$\begin{aligned}
 t &= \frac{-k}{2} + \sqrt{\left(\frac{-k}{2}\right)^2 + 1} = -.030706 + \sqrt{1.000942858436} \\
 &= -.030706 + 1.000471 = +.969765
 \end{aligned}$$

$$N I = \frac{nt_2}{1+t_2} = \frac{282 \times .969765_2}{1+.969765_2} = \frac{282 \times .940444}{1.940444} = 136.7$$

$$N II = n - n_1 = 282 - 136.7 = 145.3$$

$$P I 1 = P_1 + \frac{s_1}{t} = .5745 + \frac{.325383}{.969765} = .5745 + .335528 = .9100$$

$$P II 1 = 1 - s_1 \times t = .5745 - .325383 \times .969765 = .5745 - .315545 = .2590$$

$$P I 2 = P_2 + \frac{s_2}{t} = .3369 + \frac{.327944}{.969765} = .3369 + .338169 = .6751$$

$$P II 2 = P_2 - s_2 \times t = .3369 - .327944 \times .969765 = .3369 - .318029 = .0189$$

$$P I 3 = P_3 + \frac{s_3}{t} = .6277 + \frac{.315959}{.969765} = .6277 + .325810 = .9535$$

$$P II 3 = P_3 - s_3 \times t = .6277 - .31595 \times .969765 = .6277 - .306406 = .3213$$

$$P I 4 = P_4 + \frac{s_4}{t} = .2943 + \frac{.226022}{.969765} = .2943 + .233069 = .5274$$

$$P II 4 = P_4 - s_4 \times t = .2943 - .226022 \times .969765 = .2943 - .219188 = .0751$$

(Note 4) Latent Structure of Class Identification
Conscionsness

Latent Class Frequency	Latent Marginals of Items			
	1	2	3	4
N I = 136.7	0,9100	0,6751	0,9535	0,5274
N II = 145.3	0,2590	0,0189	0,3213	0,0751

(Note 5)

	Latet Class I (1)	Latet Class II (2)	Total (3)=(1)+(2)	Observed number of class (4)	(1)/(3)
+ + + +	42.2	0.0	42.2	45	0.999
+ + + -	37.8	0.2	38.0	35	0.994
- + + +	4.2	0.0	4.2	3	0.988
+ + - -	2.1	0.0	2.1	1	0.983
+ - + -	20.3	0.9	21.2	18	0.957
- + + -	3.7	0.6	4.3	6	0.860
+ + - -	1.8	0.4	2.2	5	0.818
- + - +	0.2	0.1	0.3	0	0.666
+ - + -	18.2	10.8	29.0	36	0.505
- - + +	2.0	2.5	4.5	6	0.444
+ - - +	1.0	1.9	2.9	6	0.344
- + - -	0.2	1.3	1.5	0	0.133
- - + -	1.8	31.4	33.2	28	0.054
+ - - -	0.9	23.2	24.1	21	0.037
- - - +	0.1	5.4	5.5	4	0.018
- - - -	0.1	66.3	66.4	68	0.001
	136.6	145.0	281.6	282	

$$\text{Precision} = \frac{130.5+132.0}{282} = 93.15\% \quad x^2=8.34 \quad df=8$$

$$0.5 > P > 0.3$$

IV The Results of Analysis

When we mark the models with + and - according to each of the three indexes, we are enabled to acquire such response of types and frequencies as the following.

Response Type and Response Frequency

Response Pattern

Name of Index			
Identification Consciousness	Living Standard	S.E.S	Frequency
+	+	+	62
+	+	-	21
+	-	+	31
-	+	+	13
+	-	-	28
-	+	-	22
-	-	+	95
-	-	-	76
			268

$n_1 = 142$

$n_2 = 118$

$n_3 = 121$

$n_{12} = 83$

$n_{13} = 93$

$n_{23} = 75$

$n_{123} = 62$

$n = 268$

These response types are explained by some latent quantity which determines a stratum. If we are allowed to presume such latent structure and then to grasp the actual through this presumed structure with application of the actual data, it is possible to determine the order of the types on the basis of the theoretical value scored by the presumed structure. this order is exactly that of the stratum. This latent structure reveals such results as in Note 7 by the Note 6 computation. As its capacity is 89.7% as in Note 8 and its adaptability $X^2 = 1,2998$ becomes $0.99 > P > 0.98$ in $df = 7$, we can safely use this structure model for the understanding of phenomena in reference to the actual. On the bases of the obtained latent structure, stratum order is assigned as in Note 8.

(Note 6)

Latent Structure Analysis

$$n=268 \quad n^2=71824$$

$$[ij] = nnij - n_i n_j$$

$$[12] = 268 \times 83 - 142 \times 118 = 22244 - 16756 = 5188$$

$$[13] = 268 \times 93 - 142 \times 121 = 24924 - 17182 = 7742$$

$$[23] = 268 \times 75 - 118 \times 121 = 20100 - 14278 = 5822$$

$\log[ij]$	$[ij] / n^2$	$s_i s_j$
3,715000	0,072232	0,072232
3,888853	0,107791	0,107791
3,765072	0,081059	0,081059

$$\log s_i = \frac{1}{m-1} \sum \log[ij] - \frac{1}{m-1} \times \frac{1}{m-2} \sum \sum \log[ik] - \log n$$

$m = \text{No. of Item} \quad m = 3$

$$\begin{aligned} \log s_1 &= \frac{1}{2} (3,715000 + 3,888853) - \frac{1}{2} (3,765072) - 2,428135 \\ &= \frac{1}{2} (7,603853) - \frac{1}{2} (3,765072) - 2,428135 \\ &= 3,01926 - 1,882536 - 2,428135 = 1,491255 \\ s_1 &= .309924 \end{aligned}$$

$$\begin{aligned} \log s_2 &= \frac{1}{2} (3,715000 + 3,765072) - \frac{1}{2} (3,888853) - 2,428135 \\ &= \frac{1}{2} (7,480072) - \frac{1}{2} (3,888853) - 2,428135 \\ &= 3,740036 - 1,944426 - 2,428135 = 1,367475 \\ s_2 &= .233064 \end{aligned}$$

$$\begin{aligned} \log s_3 &= \frac{1}{2} (3,888853 + 3,765072) - \frac{1}{2} (3,715000) - 2,428135 \\ &= \frac{1}{2} (7,653925) - \frac{1}{2} (3,715000) - 2,428135 \\ &= 3,826962 - 1,857500 - 2,428135 = 1,541327 \\ s_3 &= .347798 \end{aligned}$$

$[\mu]$

$$\mu = \frac{[jk \ i]}{[jk]} [jk ; i] = nij k n_i - nij n_{ik}$$

$[ijk]$

$[123]$

$$\mu_1 = \frac{[23 ; 1]}{[23]} = \frac{1085}{5188} = .209136$$

$$\mu_2 = \frac{[13 ; 2]}{[13]} = \frac{1091}{7742} = .140920$$

$$\mu_3 = \frac{[12; 3]}{[12]} = \frac{527}{5822} = .090519$$

$$\begin{aligned} [23; 1] &= n_{123} n_1 - n_{12} n_{13} \\ &= 62 \times 142 - 83 \times 93 = 8804 - 7719 = 1085 \end{aligned}$$

$$\begin{aligned} [13; 2] &= n_{123} n_2 - n_{12} n_{23} \\ &= 62 \times 118 - 83 \times 75 = 7316 - 6225 = 1091 \end{aligned}$$

$$\begin{aligned} [12; 3] &= n_{123} n_3 - n_{13} n_{23} \\ &= 62 \times 121 - 93 \times 725 = 7502 - 6975 = 527 \end{aligned}$$

$$P_1 = \frac{n_1}{n} = \frac{142}{268} = .5299$$

$$P_2 = \frac{n_2}{n} = \frac{118}{268} = .4403$$

$$P_3 = \frac{n_3}{n} = \frac{121}{268} = .4515$$

[K]

$$\begin{aligned} k_1 &= \frac{S_1}{P_1} - \frac{P_1}{S_1} + \frac{\mu_1}{P_1 S_1} \\ &= \frac{.309924}{.5299} - \frac{.5299}{.309924} + \frac{.209136}{.5299 \times .309924} \\ &\quad (.164229) \\ &= .584873 - 1.709774 + 1.273441 = .147440 \end{aligned}$$

$$\begin{aligned} k_2 &= \frac{s_2}{P_2} - \frac{P_2}{s_2} + \frac{\mu_2}{P_2 s_2} \\ &= \frac{.233064}{.4403} - \frac{.4403}{.233064} + \frac{.140920}{.4403 \times .233064} \\ &\quad (.102618) \\ &= .529330 - 1.889181 + 1.373248 = .013397 \end{aligned}$$

$$\begin{aligned} k_3 &= \frac{s_3}{P_3} - \frac{P_3}{s_3} + \frac{\mu_3}{P_3 s_3} \\ &= \frac{.347798}{.4515} - \frac{.4515}{.347798} + \frac{.090519}{.4515 \times .347798} \\ &\quad (.157031) \\ &= .770316 - 1.298167 + .576440 = .048589 \end{aligned}$$

$$k = .069809$$

$$\begin{aligned} t &= \frac{-K}{2} + \sqrt{\left(\frac{-k}{2}\right)^2 + 1} = -.034904 + \sqrt{1.001218289216} \\ &= -.034904 + 1.000609 = .965705 \end{aligned}$$

$$N I = \frac{n t^2}{1 + t^2} = \frac{249,933048}{1,932586} = 129.3$$

$$NII = N - NI = 268 - 129.3 = 138.7$$

$$P_{II} = P_1 + \frac{s_1}{t} = .5299 + .3209 = .8508$$

$$PII1 = P_1 + s_1 \times t = .5299 - .2993 = .2306$$

$$PII2 = P_2 + \frac{S_2}{t} = .4403 + .2413 = .6816$$

$$PII2 = P_2 - s_2 \times t = .4403 - .2251 = .2152$$

$$PII3 = P_3 + \frac{s_3}{t} = .4515 + .3601 = .8116$$

$$PII3 = P_3 - s_3 \times t = .451 - .3359 = .1156$$

(Note 7) Latent Structure of Stratnm

Latent Class Frequency	Latent Marginals of Items		
	P=1	P=2	P=3
n I = 129.3	.8508	.6816	.8116
n II = 138.7	.2306	.2152	.1156

(Note 8)

Rank	Response Pattern	Latent Class I (1)	Latent Class II (2)	Total fitted (3)=(1)+(2)	Actual (4)	Ratio = (1)/ (3)
1	+ + +	60.9	.8	61.7	62	.987
2	+ - +	28.4	2.9	31.3	31	.907
3	- + +	10.7	2.7	13.4	13	.798
4	+ + -	14.1	6.1	20.2	21	.698
5	- - +	5.6	9.7	14.7	15	.340
6	+ - -	6.6	22.2	28.8	28	.229
7	- + -	2.5	20.3	22.8	22	.110
8	- - -	1.1	74.0	75.1	76	.015
		129.3	138.7	268	268	

$$\text{Precision} = \frac{114.1+126.2}{268} = \frac{240.3}{268} = 89\%$$

$$\chi^2 = 1,2998 \quad df = 7 \quad .99 > P > .98$$

In the next place let us take up the problem of relation between each stratum and its behavior. Strata with similarity in behavior pattern may be conceived as on the same standard. In this respect, how to discover similarity in behavior pattern comes into question. The behavior patterns we are going to deal with are Q.9 about living expenses, Q.13 about bathing frequency, Q.14 on hair-cutting frequency, Q.15 on the use of a barbers's shop, Q.16 on the presence of the sick, Q.17 on the presence of the deformed, disabled, long-term invalids. Now we examine one by one which stratum should be made a boundary line in separating the upper and lower classes so that we may no longer see any difference between in behavior pattern.

we thus get results like Note 9.

Note. 9.

Computation Table for deciding Border Line Stratum

Q. 9 Is your family budget in the black or in the red ?

1. In the black 2. Balanced 3. In the red ?

	1	2	3	4	5	6	7	8	
1 + 2	51	14	9	14	8	16	17	22	151
3	11	17	4	7	7	12	5	54	171
	62	31	13	2	15	28	22	76	268

2×2

$$x^2 = \frac{n(ad-bc)^2}{(a+b)(c+d)(a+c)(b+d)}$$

	1+2	3	
8	22	54	76
1~7	129	63	192
	151	117	

$$X^2 = \frac{268 \times (54 \times 129 - 63 \times 22)^2}{151 \times 117 \times 76 \times 192}$$

$$= \frac{268 \times 5580 \times 5580}{151 \times 117 \times 76 \times 192} = \frac{8344555200}{257796864}$$

$$x^2 (0.05) = 3.841$$

significant

df = 1

	1+2	3	
8.7	39	59	98
1~6	112	58	170
	151	117	

$$x^2 = \frac{268(112 \times 59 - 58 \times 39)^2}{151 \times 117 \times 98 \times 170}$$

$$= \frac{268 \times 4346 \times 4346}{151 \times 117 \times 98 \times 170} = \frac{5061907888}{294332220}$$

$$x^2 (0.05) = 3,841$$

$$df = 1$$

significant			
	1+2	8	
6.7.8	55	71	126
1~5	96	46	142
	151	117	268

$$x^2 = \frac{268(96 \times 71 - 46 \times 55)^2}{151 \times 117 \times 126 \times 142}$$

$$= \frac{268 \times 4286 \times 4286}{151 \times 117 \times 126 \times 142} = \frac{160199.4}{151 \times 63} = 16.8$$

$$x^2(0.05) = 3,841 < 16.8 \quad df = 1$$

significant			
	1+2	3	
5.6.7.8	63	78	141
1~4	88	39	127
	151	117	268

$$x^2 = \frac{268(88 \times 78 - 63 \times 39)^2}{151 \times 117 \times 141 \times 127}$$

$$= \frac{268 \times 2517 \times 2517}{151 \times 117 \times 141 \times 127} = \frac{31605.1}{5889} = 5.36$$

$$x^2 (0.05) = 3.841 < 5.36$$

$$df = 1$$

significant			
	1+2	3	
4.5.6.7.8	77	85	162
1~3	74	32	106
	151	117	

$$x^2 = \frac{268(85 \times 74 - 77 \times 32)^2}{151 \times 117 \times 162 \times 106}$$

$$= \frac{268 \times 3826 \times 3826}{151 \times 117 \times 162 \times 106} = \frac{3409.8}{17667} = 0.193$$

$$x^2(0.05) = 3.841 > 0.193 \quad df=1$$

not significant

	1	2	3	4	
1	0	2	14	46	0
2	0	5	8	18	0
3	0	2	1	9	1
4	0	0	4	17	0
5	0	1	5	9	0
6	0	2	11	15	0
7	1	0	8	13	0
8	3	14	25	32	2
	4	26	76	159	3
					268

$$x^2 = \frac{N^2}{U_i L_i} \left(\sum \frac{Li^2}{U_i + Li} - \frac{Lt^2}{U_t + Lt} \right)$$

	8	1~7		
1	3	1	4	$\chi^2 = 86.17$
2	14	12	26	$df = 3$
3	25	51	76	$\chi^2(0.05) = 7.815 < 86.17$
4	32	127	159	
	74	191	265	significant
	8+7	1~6		
1	4	0	4	$\chi^2 = 16.5456$
2	14	12	26	$df = 3$
3	33	43	76	$\chi^2(0.05) = 7.815 < 16.5456$
4	45	114	159	
	96	169	265	significant
	8. 7. 6.	1~5		
1	4	0	4	$\chi^2 = 16.0158$
2	16	10	26	$df = 3$
3	44	32	76	$\chi^2(0.05) = 7.815 < 16.0158$
4	60	99	159	
	124	141	265	significant
	8. 7. 6. 5,	1~4		
1	4	0	4	$\chi^2 = 15.2557$
2	17	9	26	$df = 3$
3	49	27	76	$\chi^2(0.05) = 7.815 < 15.255$
4	69	90	159	
	139	126	265	significant
	4.5.6. 7.8	1. 2 3.		
1	4	0	4	$\chi^2 = 1.7945$
2	17	9	26	$df = 3$
3	53	23	76	$\chi^2(0.05) = 7.815 > 1.7945$
4	86	73	159	
	160	105	265	not significant

Q. 14. How many times do you have your hair cut ?

	1	2	3	4	5	D.K.	
1	0	0	18	20	23	1	62
2	0	1	11	8	10	1	31
3	0	0	1	3	6	3	13
4	0	2	10	7	2	0	21
5	0	1	8	2	4	0	15
6	0	0	18	3	7	0	28
7	0	1	11	2	8	0	22
8	1	8	36	10	13	8	76

	1	13	113	55	73	13	268
--	---	----	-----	----	----	----	-----

	1~4	5		1~4	5		1~4	5			
8	55	13	68	7.8	69	21	90	6.7.8	90	28	118
1~7	127	60	187	1~6	113	52	165	1~5	92	45	137
	182	73	255		182	73	255		182	73	255

$$x^2=4.1 \quad df=$$

$$x^2=1.34 \quad df=1$$

$$x^2=26 \quad df=1$$

Q. 15. Do you go to the barber's ?

	1	2	3	D.K.	
1	55	1	5	1	62
2	26	2	3	0	31
3	8	3	1	1	13
4	17	0	4	0	21
5	14	1	0	0	15
6	24	3	0	1	28
7	15	4	3	0	22
8	54	12	2	8	76
	213	26	18	11	268

	8~7	6~1	
1	69	144	213
2	16	10	26
3	5	13	18
	90	187	257

$$x^2=9.087 \quad df=2$$

	8~6	5~1	
1	93	120	213
2	19	7	26
3	5	13	18
	117	140	257

$$x^2=10.48$$

$$df = 2$$

	8 1~7				5~8 1~4				4~8 1~3		
1	54	159	213	1	107	106	213	1	124	89	213
2	12	14	26	2	20	6	26	2	20	6	26
3	2	16	18	3	5	13	18	3	9	9	18
	68	189	257		132	125	257		153	104	257
$x^2=5.14$			$x^2=10.961$			$x^2=4.067$					
$df=2$			$df=2$			$df=2$					

Q. 16. Is there any one sick in your family at present ?

	1	2	Λ			8 1~7	
1	9	50	3	62	1	25	60
2	11	19	1	31	2	50	199
3	3	10	0	13			
4	2	19	0	21			
5	2	12	1	15		75	259
6	4	21	3	28	$x^2=6.11$		
7	4	18	0	22	$df=1$		
8	25	50	1	76			
	60	199	9	268			

	1~6	8. 7			5~1	6~8	
1	31	26	60	1	27	33	60
2	131	68	199	2	110	89	199
	122	97	256		137	122	259
$x^2=5.27$			$x^2 = 1.92$				
$df = 1$			$df = 1$				

Q. 17. Is there any one handicapped by deformity, disability, etc. ?

	1	2	
1	0	57	5
2	3	25	3
3	1	8	4
4	1	20	0
5	0	14	1
6	1	24	3
7	0	20	2
8	8	64	4
	14	232	22
			268

	1	2	
8	64	8	72
1~7	168	6	174
	232	14	246

$$x^2 = 5.5 \quad df = 1$$

	1	2	
8.7	8	84	92
1~6	6	148	154
	14	232	246

$$x^2 = 10.4 \quad df = 1$$

	1	2	
6~8	9	108	117
1~5	5	124	129
	14	232	246

$$x^2 = 3.456$$

$$df = 1$$