

A Regression Model of Group Rationality by Member Rationality and Characteristics: Group Decision-making with Limited Rationality by Problem-solving and Persuasion*

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SUMMARY

The purpose of this paper is to develop a regression model which shows that group rationality has a relation to member traits, especially group member characteristics. Although a large number of studies have been made in this field, there has been only limited success.

This study analyzed the data from 587 university students in 2, 3, 4 or 5 person groups that made 175 groups in total. Rationality of a group member and a group was measured by a questionnaire. And characteristics of a group member were assessed by Maudsley Personality Inventory (MPI), Japanese edition.

The model developed here is as follows.

$$GR = \beta_0 + \beta_1 MRAV + \beta_2 EAV + \beta_3 EAV^2 + \beta_4 NAV + \beta_5 NAV^2 + \beta_6 D + \varepsilon$$

The variables in the equation mean as follows.

- GR : Group Rationality
- MRAV: Average of Member Rationality
- EAV : Average of Member E score from MPI
- NAV : Average of Member N score from MPI
- D : Dummy variable ; male = 1, Female = 0

This model passed the test for heteroscedasticity by the Goldfeld-Quandt test.

The results estimated are given as under.

$$\begin{aligned} \hat{GR} &= 12.604 + 0.764MRAV - 0.501EAV + 0.008EAV^2 - 0.343NAV + 0.008NAV^2 \\ &\quad (t = 3.931) \quad (t = 9.214) \quad (t = -2.911) \quad (t = 2.944) \quad (t = -2.520) \quad (t = 2.671) \\ &\quad - 1.006D \\ &\quad (t = -2.061) \\ R^2 &= 0.401 \quad P = 1.21E-16 \end{aligned}$$

This model indicates that the most effective average E score of a group is approximately 31.313. And the most effective average N score of a group is about 21.438.

This experiment proved the usefulness of MPI and produced some new findings, but could not find the statistical relationship between group size and group rationality.

* A preliminary version of this paper was "New Regression Models of Group Rationality by Member Rationality and Characteristics in Small Groups: Group Decision-making with Limited Rationality by "Problem-solving" and "Persuasion"" (Discussion Paper Series No.15, October 1994, The Society of Economics and Business Administration, Kyoto Sangyo University).

INTRODUCTION

The purpose of this paper is to present a regression model which describes the relation between group rationality and group member traits, especially group member characteristics. There are many problems to be solved in the world but our rationality to challenge them is limited. If problem-solving or decision-making within groups is an important part of our lives and if group rationality which determines the problem-solving or decision-making level depends on group member traits, it is essential to estimate the relation between group rationality and group member traits.

Although a large number of studies have been made in this field, there has been only limited success (Williams and Sternberg, 1988; Heslin, 1964; Mann, 1959). But this experiment shows that member traits have a statistically strong relation to group decision-making or group rationality.

This paper does not, however, treat all types of group decision-making and group member traits. First, group decision-making may be classified into four major types according to March and Simon (1958): (1) problem-solving, (2) persuasion, (3) bargaining and (4) politics. But, group decision-making in this study covers only problem-solving and persuasion processes. Further more, member traits in this paper only mean member rationality scored from a questionnaire and E and N score from Maudsley Personality Inventory (MPI). Although member traits in this paper are limited, they will act as useful factors in regression analysis.

DISCUSSION OF THE STUDY

1. The aim and the method of this experiment

The aim of this experiment is to develop the regression model which shows group rationality structured by group members traits.

(1) The subject of this experiment

Five hundred eighty-seven university students were divided into two, three, four or five-person groups which made one hundred seventy-five groups in total. In the grouping process, the following three criteria were employed for simplification.

- a. Group members already know one another.
- b. In a group, members are on an equal status. Therefore, members of a group are composed of the same grade university students.
- c. Groups have only male or female members. Thus, there are no mixed groups in this experiment.

(2) Measurement of personal characteristics

Maudsley Personality Inventory (MPI, Japanese edition) was employed.

(3) Measurement of rationality

Personal rationality of a group member and group rationality were measured by the game developed by Hikaru YANAGIHARA (1982). In this game, the lower the point total, the higher the rationality.

In the beginning, participants are asked to answer the following questionnaire for themselves.

In 1972, Japanese young people were asked to select the most important item in their life among the following eight items.

Now, guess the first item they selected and give the item one point. Next, give two points to the second item, three points to the third item and so on. Thus the last item gets eight points. Don't use the same point more than once.

- a. Release from restraint
- b. No special reasons for life
- c. Money and status
- d. Sincerity and love
- e. Devotion to the state and society
- f. A rewarding job
- g. Devotion to international cooperation
- h. Religious salvation

There is, of course, the correct answer which came from an actual investigation done by the Prime Minister's Office of Japan in 1972. But, participants can only guess the correct answer. Thus their rationality is limited and their decision-making standards are not optimal but satisfactory.

After completion of the questionnaire, participants were asked to do the same questionnaire by a consensus of group members. At the same time, they were asked to make a consensus not by majority rule but by persuasion.

Data for personal rationality (PR) of a participant were measured by the following formula.

$$PR = \sum_{i=1}^8 |X_i - x_i|$$

X_i : Points for the correct answer for the i-th item

x_i : Points for a personal answer for the i-th item

And data for group rationality (GR) were obtained from the next formula.

$$GR = \sum_{i=1}^8 |X_i - z_i|$$

X_i : Points for the correct answer for the i-th item

z_i : Points for a group answer for the i-th item

2. Preparatory analysis

(1) Independent variables prepared

Before showing final results, it may be helpful to begin with preparatory analysis, namely a selection of independent variables for regression analysis. At first, six variables were prepared. But, finally, only three variables were picked out statistically.

The following six variables were considered first.

- ① Average of member rationality in a group
- ② Standard deviation of member rationality in a group
- ③ Average of member E score from MPI in a group
- ④ Standard deviation of member E score from MPI in a group
- ⑤ Average of member N score from MPI in a group
- ⑥ Standard deviation of member N score from MPI in a group

In these variables, ②, ④ and ⑥ have too weak a correlation with Group Rationality (GR), the dependent variable, to be an independent variable. Therefore only ①, ③ and ⑤ are discussed here.

(2) Group Rationality (GR) and Average of Member Rationality (MRAV)

There is a slightly weak correlation between GR and MRAV. On the other hand, although the value of R^2 is not enough, regression analysis shows enough t and P values.

- coefficient of correlation

$$r = 0.569$$

- results of regression analysis

$$GR = 1.395 + 0.772MRAV$$

$$(t = 1.226) \quad (t = 9.110)$$

$$R^2 = 0.324 \quad P = 2E-16$$

(3) Group Rationality (GR) and Average of Member E score (EAV)

Correlation between GR and EAV is fairly weak, but Fig. 1 implies a nonlinear relationship. So, in this case, a quadratic function is employed. In spite of insufficient R^2 , regression analysis supplies enough t and P values.

- coefficient of correlation

$$r = -0.028$$

- results of regression analysis

$$GR = 21.548 - 0.686EAV + 0.011EAV^2$$

$$(t = 6.913) \quad (t = -3.323) \quad (t = 3.307)$$

$$R^2 = 0.061 \quad P = 0.005$$

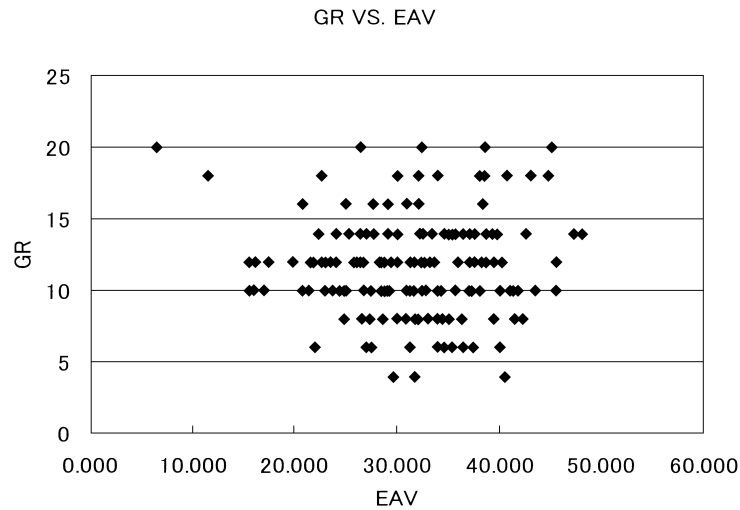


Fig. 1

(4) Group Rationality (GR) and Average of Member N score (NAV)

This case has also a fairly weak correlation and Fig. 2 shows a nonlinear relationship. And the results of regression analysis with a quadratic function also gives enough t and P values and poor R^2 .

- coefficient of correlation

$$r = -0.114$$

- results of regression analysis

$$GR = 16.098 - 0.396NAV + 0.008NAV^2$$

$$(t = 8.998) \quad (t = -2.384) \quad (t = 2.090)$$

$$R^2 = 0.038 \quad P = 0.037$$

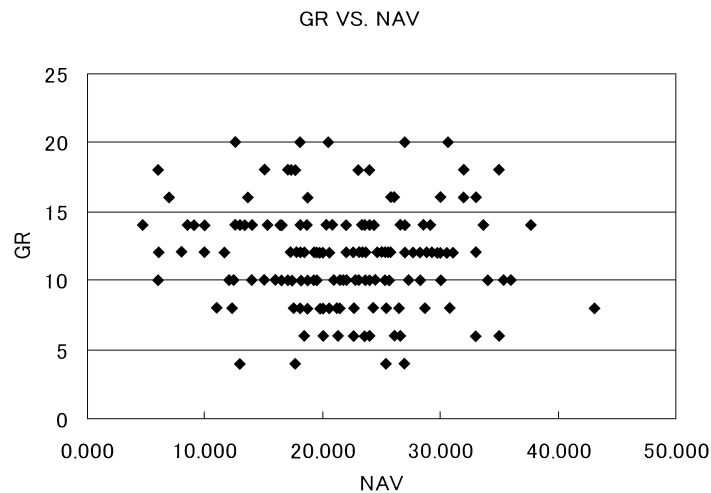


Fig. 2

3. Results

The following model is developed according to preparatory analysis.

$$GR = \beta_0 + \beta_1 MRAV + \beta_2 EAV + \beta_3 EAV^2 + \beta_4 NAV + \beta_5 NAV^2 + \beta_6 D + \varepsilon$$

The variables in the equation mean as follows.

- GR : Group Rationality
- MRAV: Average of Member Rationality
- EAV : Average of Member E score from MPI
- NAV : Average of Member N score from MPI
- D : Dummy variable; male = 1, Female = 0

This model passed the test for heteroscedasticity by the Goldfeld-Quandt test.

The results estimated are given as under and show that value of R^2 is not enough but t and P values are good enough.

$$\begin{aligned} \hat{GR} = & 12.604 + 0.764MRAV - 0.501EAV + 0.008EAV^2 - 0.343NAV + 0.008NAV^2 \\ & (t = 3.931) \quad (t = 9.214) \quad (t = -2.911) \quad (t = 2.944) \quad (t = -2.520) \quad (t = 2.671) \\ & -1.006D \\ & (t = - \\ & 2.061) \\ & R^2 = 0.401 \quad P = 1.21E-16 \end{aligned}$$

4. Discussion on the developed model

Because of poor R^2 , this model is not useful for prediction. But, anyway, this model succeeds in structuring the relation between group rationality and member traits, namely, member rationality and member characteristics. Furthermore, this study has three new findings.

(1) Problem of poor R^2

The reason for poor R^2 is that a small number of data gives statistically significant results. There must be some substantial variables. This model has only four variables: MRAV, EAV, NAV and D (male or female). But, as is commonly known, there are some other important elements for a group decision-making, such as leadership, motivation, human relations and so on.

(2) Three new findings

① Relation between group rationality and member rationality

There is a linear relationship between group rationality and the average of member rationality. The higher the level of the average of member rationality, the higher the level of group rationality.

② Relation between group rationality and member characteristics

It is often said that a personality test seems to be useful but it is too poor to predict actual social behavior (Davis, 1969). But, this model shows a quadric relationship between group ration-

ality and both E and N score.

First, given that other variables are constant, the average of member E score contributes to group rationality as Fig. 3 shows. Remember that, in this game, the lower the point total, the higher the rationality. So, Fig. 3 shows that the most effective average value of member E score is approximately 31.313.

Next, given that other variables are constant, the average of member N score contributes to group rationality as Fig. 4 indicates. Note again that, in this game, the lower the point total, the higher the rationality. Thus Fig. 4 tells that the most effective average value of member N score is approximately 21.438.

③ Group rationality of female groups

The dummy variable D in the model tells that group rationality of female group is lower than

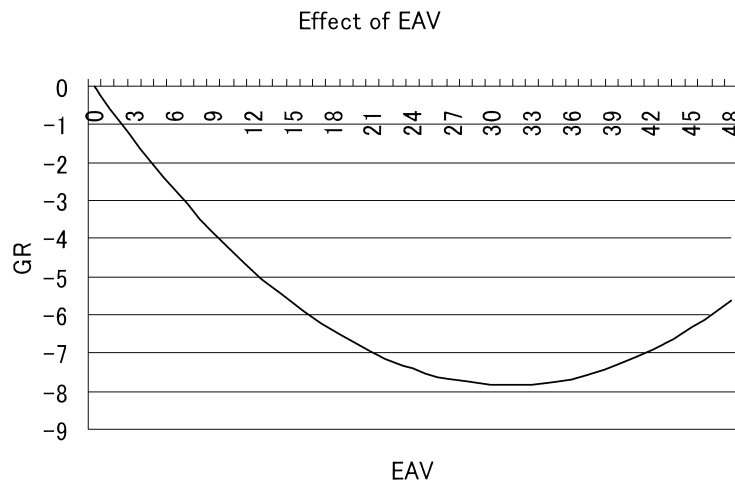


Fig. 3

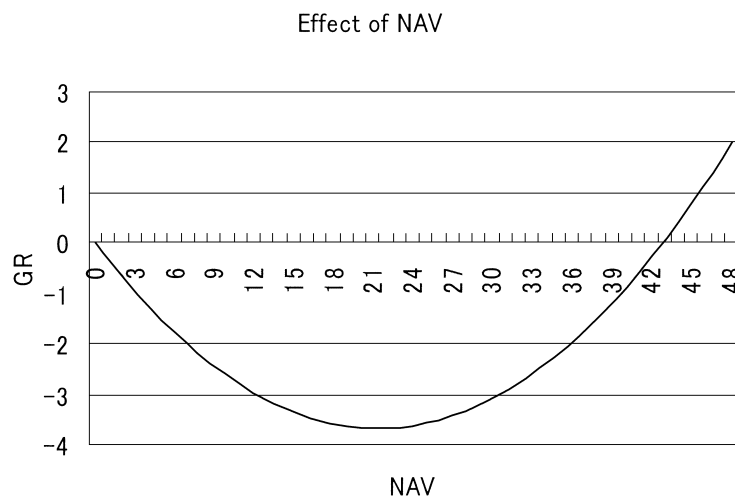


Fig. 4

that of male group.

CONCLUSION

In conclusion, the regression model developed here could offer useful information for an improvement in group rationality and in effective personnel management. Furthermore, this model proved that MPI was useful.

But, this experiment could not find the relationship between group size and group rationality. Some studies supported Steiner's (1972) relationship, process losses, but others found a different relationship from Steiner's model (Littlepage, 1991). Moreover, some other studies insisted on process gains (Shaw, 1976; Brown, 1988). Further analysis of larger groups than this study may prove the relationship between group size and group rationality.

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メンバーの合理性と性格特性とによるグループの合理性についての 回帰モデル：合理性が制限された状況における、 問題解決や説得の方法を用いたグループの意志決定

後 藤 文 彦

要 約

本稿の目的は、グループの合理性とメンバーの特性、特にメンバーの性格特性との間にある関係をとらえた回帰モデルを開発するところにある。今までに、多くの研究がこの分野でなされてきたにもかかわらず、十分な成果はまだ得られていない。

この研究では、587名の大学生を、2名あるいは3、4、5名のグループに分け、合計175グループから得られたデータが分析されている。グループ・メンバーやグループの合理性は質問表を用いて測定した。また、グループ・メンバーの性格特性の評価にはモーズレイ性格検査（MPI、日本語版）が用いられた。

設定されたモデルは以下の通りである。

$$GR = \beta_0 + \beta_1 MRV + \beta_2 EAV + \beta_3 EAV^2 + \beta_4 NAV + \beta_5 NAV^2 + \beta_6 D + \epsilon$$

変数の説明

GR : グループの合理性

MRV : グループ・メンバーの合理性平均

EAV : グループ・メンバーの E 得点平均

NAV : グループ・メンバーの N 得点平均

D : ダミー変数（男 = 1、女 = 0）

このモデルは、ゴールドフェルド = クオントの検定を用いた不均一分散の検定をパスした。推定結果は次の通りである。

$$\begin{aligned} \hat{GR} &= 12.604 + 0.764MRV - 0.501EAV + 0.008EAV^2 - 0.343NAV + 0.008NAV^2 \\ &\quad (t = 3.931) \quad (t = 9.214) \quad (t = -2.911) \quad (t = 2.944) \quad (t = -2.520) \quad (t = 2.671) \\ &\quad - 1.006D \\ &\quad (t = -2.061) \\ R^2 &= 0.401 \quad P = 1.21E-16 \end{aligned}$$

このモデルによれば、グループの E 得点平均が約 31.313 の時が最も効率的である。また、N 得点については、グループ平均が約 21.438 の時が最も効率的である。

この実験によって、MPI の有用性が実証されるとともに、いくつかの新しい成果がみいだされた。しかし、グループの大きさとグループの合理性との間に統計的な関係を見ることはできなかった。

APPENDIX: Original Data

Notes

GS: Group size

MN: Member's number in a group

PRORG: Original data for personal rationality

GRORG: Original data for group rationality

E: E score from MPI

N: N score from MPI

1

NO	GS	MN	SEX	PRORG	GRORG	E	N
1	2	1	M	14	12	32	16
2	2	2	M	16	12	25	31
3	2	1	M	10	10	44	34
4	2	2	M	10	10	43	15
5	2	1	M	12	12	38	8
6	2	2	M	24	12	8	12
7	2	1	M	14	12	46	21
8	2	2	M	16	12	20	18
9	2	1	F	8	6	46	16
10	2	2	F	16	6	27	21
11	2	1	M	12	12	47	21
12	2	2	M	12	12	32	20
13	2	1	F	14	14	39	11
14	2	2	F	8	14	46	22
15	2	1	F	10	14	46	28
16	2	2	F	18	14	28	5
17	2	1	M	12	8	30	38
18	2	2	M	6	8	36	48
19	2	1	M	12	12	46	9
20	2	2	M	16	12	28	37
21	2	1	M	12	4	33	26
22	2	2	M	8	4	48	0
23	2	1	M	6	12	27	34
24	2	2	M	28	12	25	28
25	2	1	M	14	12	39	18
26	2	2	M	14	12	35	26
27	2	1	F	10	18	27	27
28	2	2	F	20	18	33	37
29	2	1	F	10	14	30	30
30	2	2	F	14	14	35	24
31	2	1	F	10	8	44	14
32	2	2	F	22	8	22	39
33	2	1	F	6	6	23	26
34	2	2	F	12	6	32	22
35	2	1	M	18	18	39	38

2

NO	GS	MN	SEX	PRORG	GRORG	E	N
36	2	2	M	18	18	29	32
37	2	1	M	6	6	34	40
38	2	2	M	8	6	35	26
39	2	1	M	6	10	40	22
40	2	2	M	14	10	28	20
41	2	1	M	12	12	22	13
42	2	2	M	12	12	13	38
43	2	1	M	20	18	3	20
44	2	2	M	14	18	20	14
45	2	1	F	14	20	45	21
46	2	2	F	20	20	45	4
47	2	1	F	16	14	36	7
48	2	2	F	20	14	29	10
49	2	1	M	16	16	33	24
50	2	2	M	14	16	17	42
51	2	1	M	14	10	16	18
52	2	2	M	14	10	15	25
53	2	1	M	12	10	16	31
54	2	2	M	12	10	16	2
55	2	1	M	16	16	22	44
56	2	2	M	14	16	42	8
57	2	1	M	14	14	35	32
58	2	2	M	16	14	40	22
59	2	1	M	18	20	6	28
60	2	2	M	18	20	7	26
61	2	1	M	16	14	38	4
62	2	2	M	12	14	10	16
63	2	1	M	16	10	25	26
64	2	2	M	8	10	9	13
65	2	1	M	10	12	45	9
66	2	2	M	10	12	46	3
67	2	1	M	10	6	30	36
68	2	2	M	12	6	24	34
69	2	1	M	16	8	43	12
70	2	2	M	6	8	23	31

3

NO	GS	MN	SEX	PRORG	GRORG	E	N
71	2	1	M	20	20	31	30
72	2	2	M	18	20	46	6
73	2	1	F	12	12	23	25
74	2	2	F	16	12	8	41
75	2	1	F	12	10	30	28
76	2	2	F	18	10	20	19
77	2	1	M	10	10	34	22
78	2	2	M	10	10	23	24
79	2	1	M	14	18	42	6
80	2	2	M	10	18	44	6
81	2	1	M	8	6	39	8
82	2	2	M	12	6	30	39
83	2	1	M	6	10	32	12
84	2	2	M	8	10	42	22
85	2	1	M	14	10	47	0
86	2	2	M	10	10	44	12
87	3	1	M	24	12	48	23
88	3	2	M	18	12	29	26
89	3	3	M	26	12	39	17
90	3	1	M	12	14	32	20
91	3	2	M	14	14	33	30
92	3	3	M	18	14	18	37
93	3	1	M	8	14	34	18
94	3	2	M	24	14	37	12
95	3	3	M	18	14	29	24
96	3	1	M	8	8	27	32
97	3	2	M	12	8	25	14
98	3	3	M	12	8	38	30
99	3	1	M	16	14	39	27
100	3	2	M	14	14	31	9
101	3	3	M	14	14	46	20
102	3	1	M	14	10	22	11
103	3	2	M	16	10	30	10
104	3	3	M	24	10	28	24
105	3	1	M	18	14	47	16
106	3	2	M	8	14	47	18
107	3	3	M	16	14	48	8
108	3	1	M	6	8	34	15
109	3	2	M	14	8	44	15
110	3	3	M	8	8	18	38
111	3	1	M	18	16	27	34
112	3	2	M	14	16	13	29
113	3	3	M	18	16	22	33
114	3	1	M	10	4	36	30
115	3	2	M	12	4	18	9

4

NO	GS	MN	SEX	PRORG	GRORG	E	N
116	3	3	M	14	4	41	14
117	3	1	M	20	14	10	14
118	3	2	M	12	14	40	14
119	3	3	M	12	14	17	14
120	3	1	M	18	14	33	33
121	3	2	M	14	14	35	38
122	3	3	M	10	14	37	1
123	3	1	M	10	12	32	19
124	3	2	M	14	12	14	24
125	3	3	M	14	12	39	28
126	3	1	M	10	10	37	26
127	3	2	M	12	10	20	10
128	3	3	M	18	10	30	30
129	3	1	M	4	6	36	24
130	3	2	M	6	6	14	30
131	3	3	M	4	6	44	18
132	3	1	M	12	4	37	27
133	3	2	M	8	4	42	21
134	3	3	M	8	4	16	28
135	3	1	F	12	10	34	2
136	3	2	F	10	10	36	33
137	3	3	F	18	10	41	13
138	3	1	F	16	8	46	38
139	3	2	F	8	8	43	23
140	3	3	F	8	8	16	25
141	3	1	F	12	14	27	26
142	3	2	F	12	14	29	34
143	3	3	F	10	14	20	41
144	3	1	F	18	8	29	0
145	3	2	F	6	8	35	23
146	3	3	F	12	8	18	10
147	3	1	F	14	6	35	35
148	3	2	F	4	6	37	22
149	3	3	F	4	6	30	21
150	3	1	F	12	18	32	25
151	3	2	F	20	18	40	19
152	3	3	F	14	18	42	28
153	3	1	F	12	12	33	23
154	3	2	F	18	12	40	32
155	3	3	F	6	12	28	28
156	3	1	F	6	8	33	18
157	3	2	F	10	8	32	22
158	3	3	F	10	8	38	16
159	3	1	F	14	16	39	19
160	3	2	F	16	16	19	13

5

NO	GS	MN	SEX	PRORG	GRORG	E	N
161	3	3	F	14	16	35	9
162	3	1	F	12	10	38	8
163	3	2	F	10	10	28	12
164	3	3	F	16	10	45	22
165	3	1	M	8	10	32	32
166	3	2	M	6	10	38	34
167	3	3	M	16	10	44	40
168	3	1	M	16	14	31	2
169	3	2	M	16	14	43	19
170	3	3	M	10	14	33	33
171	3	1	M	10	10	35	32
172	3	2	M	24	10	29	17
173	3	3	M	14	10	22	41
174	3	1	F	14	12	46	8
175	3	2	F	14	12	42	2
176	3	3	F	8	12	20	25
177	3	1	F	10	12	45	8
178	3	2	F	20	12	20	44
179	3	3	F	14	12	25	33
180	3	1	M	14	12	16	39
181	3	2	M	12	12	41	26
182	3	3	M	18	12	40	16
183	3	1	M	6	10	31	36
184	3	2	M	16	10	44	28
185	3	3	M	8	10	22	44
186	3	1	M	10	10	13	28
187	3	2	M	12	10	32	34
188	3	3	M	22	10	19	40
189	3	1	M	10	10	45	21
190	3	2	M	6	10	37	10
191	3	3	M	6	10	38	38
192	3	1	M	14	12	7	24
193	3	2	M	18	12	38	12
194	3	3	M	14	12	35	24
195	3	1	M	16	10	35	33
196	3	2	M	14	10	18	29
197	3	3	M	14	10	18	20
198	3	1	M	18	8	46	24
199	3	2	M	10	8	25	26
200	3	3	M	12	8	38	23
201	3	1	M	4	10	35	31
202	3	2	M	18	10	42	2
203	3	3	M	12	10	30	32
204	3	1	M	18	12	35	25
205	3	2	M	20	12	17	32

6

NO	GS	MN	SEX	PRORG	GRORG	E	N
206	3	3	M	8	12	34	31
207	3	1	M	14	10	21	25
208	3	2	M	16	10	38	12
209	3	3	M	14	10	14	11
210	3	1	F	12	18	10	22
211	3	2	F	14	18	12	6
212	3	3	F	16	18	46	25
213	3	1	F	10	12	30	12
214	3	2	F	14	12	35	30
215	3	3	F	16	12	34	12
216	3	1	M	12	6	30	28
217	3	2	M	2	6	28	20
218	3	3	M	12	6	8	12
219	3	1	M	16	14	34	4
220	3	2	M	12	14	34	6
221	3	3	M	16	14	38	4
222	3	1	M	14	12	20	30
223	3	2	M	10	12	43	11
224	3	3	M	18	12	35	33
225	3	1	F	24	18	42	12
226	3	2	F	10	18	35	28
227	3	3	F	20	18	45	12
228	3	1	F	10	10	46	24
229	3	2	F	8	10	31	15
230	3	3	F	16	10	43	17
231	3	1	M	14	12	33	16
232	3	2	M	14	12	43	32
233	3	3	M	10	12	18	22
234	3	1	F	16	14	20	27
235	3	2	F	18	14	39	28
236	3	3	F	10	14	22	15
237	3	1	F	14	10	44	18
238	3	2	F	12	10	40	13
239	3	3	F	16	10	40	20
240	3	1	M	14	8	35	13
241	3	2	M	16	8	42	14
242	3	3	M	10	8	18	10
243	3	1	F	14	6	40	12
244	3	2	F	6	6	32	16
245	3	3	F	8	6	40	36
246	3	1	M	12	4	22	33
247	3	2	M	8	4	37	26
248	3	3	M	10	4	30	22
249	3	1	M	14	14	9	25
250	3	2	M	16	14	34	26

7

NO	GS	MN	SEX	PRORG	GRORG	E	N
251	3	3	M	8	14	36	15
252	3	1	M	20	14	23	10
253	3	2	M	14	14	34	30
254	3	3	M	10	14	30	21
255	3	1	M	12	14	48	4
256	3	2	M	10	14	48	24
257	3	3	M	14	14	48	12
258	3	1	F	22	16	20	22
259	3	2	F	10	16	39	8
260	3	3	F	16	16	24	26
261	3	1	M	18	20	26	12
262	3	2	M	20	20	31	35
263	3	3	M	14	20	40	45
264	4	1	M	8	14	35	29
265	4	2	M	12	14	34	26
266	4	3	M	14	14	39	22
267	4	4	M	14	14	30	37
268	4	1	M	12	16	44	30
269	4	2	M	14	16	23	42
270	4	3	M	24	16	23	8
271	4	4	M	14	16	10	40
272	4	1	M	10	10	46	12
273	4	2	M	16	10	27	27
274	4	3	M	10	10	27	24
275	4	4	M	8	10	24	38
276	4	1	M	14	14	20	30
277	4	2	M	14	14	30	14
278	4	3	M	6	14	44	39
279	4	4	M	18	14	39	11
280	4	1	F	10	14	27	46
281	4	2	F	10	14	36	27
282	4	3	F	14	14	32	40
283	4	4	F	6	14	34	38
284	4	1	M	14	16	48	18
285	4	2	M	12	16	22	38
286	4	3	M	10	16	42	12
287	4	4	M	22	16	41	35
288	4	1	F	12	10	41	32
289	4	2	F	14	10	23	13
290	4	3	F	18	10	29	17
291	4	4	F	10	10	24	22
292	4	1	M	10	12	6	18
293	4	2	M	12	12	31	26
294	4	3	M	18	12	14	31
295	4	4	M	14	12	14	42

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NO	GS	MN	SEX	PRORG	GRORG	E	N
296	4	1	F	20	14	30	21
297	4	2	F	18	14	38	2
298	4	3	F	16	14	47	8
299	4	4	F	12	14	42	19
300	4	1	M	14	12	10	17
301	4	2	M	12	12	36	21
302	4	3	M	12	12	25	40
303	4	4	M	18	12	43	16
304	4	1	M	10	10	41	6
305	4	2	M	20	10	19	11
306	4	3	M	12	10	21	21
307	4	4	M	12	10	45	10
308	4	1	M	12	12	32	14
309	4	2	M	18	12	33	13
310	4	3	M	14	12	34	30
311	4	4	M	14	12	34	20
312	4	1	F	10	8	15	33
313	4	2	F	10	8	24	16
314	4	3	F	10	8	30	36
315	4	4	F	16	8	37	12
316	4	1	M	12	12	37	33
317	4	2	M	12	12	27	22
318	4	3	M	14	12	26	10
319	4	4	M	10	12	42	36
320	4	1	M	20	14	42	23
321	4	2	M	14	14	46	6
322	4	3	M	14	14	25	13
323	4	4	M	16	14	46	19
324	4	1	F	10	10	14	4
325	4	2	F	12	10	46	38
326	4	3	F	20	10	32	28
327	4	4	F	16	10	38	8
328	4	1	M	10	8	35	46
329	4	2	M	16	8	46	0
330	4	3	M	8	8	41	22
331	4	4	M	14	8	36	14
332	4	1	M	18	18	10	26
333	4	2	M	22	18	48	14
334	4	3	M	18	18	48	8
335	4	4	M	14	18	48	12
336	4	1	F	10	12	34	18
337	4	2	F	20	12	30	20
338	4	3	F	6	12	42	3
339	4	4	F	16	12	47	28
340	4	1	M	18	14	33	36

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NO	GS	MN	SEX	PRORG	GRORG	E	N
341	4	2	M	8	14	47	6
342	4	3	M	20	14	25	4
343	4	4	M	10	14	41	6
344	4	1	F	18	18	28	35
345	4	2	F	20	18	38	14
346	4	3	F	10	18	26	7
347	4	4	F	14	18	36	36
348	4	1	M	18	14	20	26
349	4	2	M	16	14	33	26
350	4	3	M	12	14	26	13
351	4	4	M	12	14	29	18
352	4	1	F	10	12	28	30
353	4	2	F	12	12	36	28
354	4	3	F	10	12	41	24
355	4	4	F	8	12	22	38
356	4	1	M	26	8	40	16
357	4	2	M	14	8	31	15
358	4	3	M	8	8	28	39
359	4	4	M	8	8	28	16
360	4	1	M	12	12	40	25
361	4	2	M	6	12	40	35
362	4	3	M	14	12	36	23
363	4	4	M	10	12	32	7
364	4	1	M	10	16	16	6
365	4	2	M	20	16	36	6
366	4	3	M	16	16	18	16
367	4	4	M	18	16	46	0
368	4	1	M	16	10	22	46
369	4	2	M	6	10	44	18
370	4	3	M	14	10	38	20
371	4	4	M	10	10	26	12
372	4	1	M	12	8	41	28
373	4	2	M	12	8	48	16
374	4	3	M	18	8	36	7
375	4	4	M	4	8	44	21
376	4	1	M	8	12	34	20
377	4	2	M	24	12	29	33
378	4	3	M	6	12	9	36
379	4	4	M	10	12	14	11
380	4	1	M	10	8	43	30
381	4	2	M	16	8	43	24
382	4	3	M	10	8	40	16
383	4	4	M	16	8	40	10
384	4	1	M	14	8	35	21
385	4	2	M	20	8	34	14

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NO	GS	MN	SEX	PRORG	GRORG	E	N
386	4	3	M	14	8	42	19
387	4	4	M	16	8	13	21
388	4	1	M	14	12	16	46
389	4	2	M	6	12	14	13
390	4	3	M	16	12	32	4
391	4	4	M	12	12	34	10
392	4	1	M	10	12	46	8
393	4	2	M	14	12	36	26
394	4	3	M	12	12	34	24
395	4	4	M	18	12	45	21
396	4	1	M	8	10	30	32
397	4	2	M	16	10	36	13
398	4	3	M	12	10	30	25
399	4	4	M	14	10	14	25
400	4	1	M	14	12	34	9
401	4	2	M	6	12	34	38
402	4	3	M	16	12	48	42
403	4	4	M	12	12	11	30
404	4	1	M	6	10	5	45
405	4	2	M	16	10	24	18
406	4	3	M	18	10	25	28
407	4	4	M	18	10	29	22
408	4	1	F	12	12	28	33
409	4	2	F	6	12	34	17
410	4	3	F	18	12	41	25
411	4	4	F	10	12	31	40
412	4	1	M	10	10	21	29
413	4	2	M	18	10	29	16
414	4	3	M	12	10	15	18
415	4	4	M	12	10	34	10
416	4	1	M	12	12	45	2
417	4	2	M	12	12	30	18
418	4	3	M	6	12	12	8
419	4	4	M	10	12	16	4
420	4	1	M	12	8	30	32
421	4	2	M	18	8	28	25
422	4	3	M	10	8	36	28
423	4	4	M	8	8	34	38
424	4	1	M	18	12	29	34
425	4	2	M	10	12	18	27
426	4	3	M	8	12	17	39
427	4	4	M	8	12	30	22
428	5	1	M	8	12	14	36
429	5	2	M	8	12	33	18
430	5	3	M	18	12	12	6

11

NO	GS	MN	SEX	PRORG	GRORG	E	N
431	5	4	M	8	12	34	14
432	5	5	M	16	12	16	16
433	5	1	F	8	14	30	19
434	5	2	F	8	14	12	23
435	5	3	F	12	14	18	32
436	5	4	F	14	14	42	15
437	5	5	F	16	14	48	4
438	5	1	M	14	10	36	11
439	5	2	M	10	10	22	37
440	5	3	M	24	10	38	2
441	5	4	M	16	10	35	26
442	5	5	M	8	10	40	20
443	5	1	M	14	14	38	32
444	5	2	M	16	14	42	36
445	5	3	M	16	14	35	21
446	5	4	M	8	14	25	29
447	5	5	M	16	14	33	4
448	5	1	M	14	10	44	44
449	5	2	M	18	10	48	8
450	5	3	M	12	10	34	7
451	5	4	M	20	10	39	6
452	5	5	M	10	10	44	22
453	5	1	M	10	18	45	5
454	5	2	M	16	18	40	6
455	5	3	M	10	18	47	2
456	5	4	M	14	18	48	4
457	5	5	M	12	18	44	13
458	5	1	M	6	10	43	5
459	5	2	M	14	10	42	10
460	5	3	M	14	10	46	10
461	5	4	M	10	10	30	19
462	5	5	M	14	10	44	18
463	5	1	M	14	14	37	25
464	5	2	M	14	14	37	18
465	5	3	M	18	14	34	17
466	5	4	M	10	14	39	19
467	5	5	M	10	14	20	3
468	5	1	M	14	14	38	35
469	5	2	M	12	14	37	23
470	5	3	M	14	14	22	40
471	5	4	M	16	14	43	25
472	5	5	M	16	14	42	10
473	5	1	M	12	6	44	20
474	5	2	M	22	6	46	29
475	5	3	M	14	6	21	32

12

NO	GS	MN	SEX	PRORG	GRORG	E	N
476	5	4	M	14	6	41	10
477	5	5	M	12	6	48	22
478	5	1	M	8	12	12	20
479	5	2	M	8	12	33	4
480	5	3	M	12	12	24	34
481	5	4	M	16	12	6	10
482	5	5	M	16	12	24	22
483	5	1	M	14	10	24	21
484	5	2	M	14	10	45	11
485	5	3	M	14	10	40	6
486	5	4	M	18	10	36	17
487	5	5	M	10	10	19	31
488	5	1	M	12	8	11	14
489	5	2	M	14	8	30	8
490	5	3	M	12	8	28	28
491	5	4	M	16	8	46	18
492	5	5	M	14	8	44	20
493	5	1	M	6	6	41	13
494	5	2	M	18	6	22	39
495	5	3	M	12	6	30	32
496	5	4	M	16	6	40	30
497	5	5	M	8	6	44	17
498	5	1	M	20	10	39	17
499	5	2	M	14	10	42	20
500	5	3	M	0	10	32	24
501	5	4	M	18	10	37	31
502	5	5	M	14	10	36	36
503	5	1	M	16	10	20	30
504	5	2	M	14	10	37	19
505	5	3	M	12	10	28	22
506	5	4	M	16	10	39	20
507	5	5	M	14	10	32	23
508	5	1	M	14	8	26	27
509	5	2	M	14	8	23	13
510	5	3	M	12	8	35	10
511	5	4	M	16	8	33	25
512	5	5	M	12	8	37	24
513	5	1	M	6	12	14	18
514	5	2	M	18	12	37	12
515	5	3	M	18	12	46	23
516	5	4	M	18	12	24	30
517	5	5	M	18	12	11	30
518	5	1	M	10	10	39	16
519	5	2	M	14	10	15	37
520	5	3	M	8	10	14	30

13

NO	GS	MN	SEX	PRORG	GRORG	E	N
521	5	4	M	12	10	31	17
522	5	5	M	12	10	16	20
523	5	1	M	16	12	32	12
524	5	2	M	16	12	40	14
525	5	3	M	12	12	48	17
526	5	4	M	16	12	35	12
527	5	5	M	12	12	36	34
528	5	1	M	10	14	46	16
529	5	2	M	14	14	24	0
530	5	3	M	20	14	46	4
531	5	4	M	16	14	22	13
532	5	5	M	16	14	44	12
533	5	1	M	10	8	27	36
534	5	2	M	12	8	33	20
535	5	3	M	8	8	35	8
536	5	4	M	14	8	42	16
537	5	5	M	16	8	33	8
538	5	1	M	14	20	40	16
539	5	2	M	14	20	30	10
540	5	3	M	4	20	42	28
541	5	4	M	14	20	9	21
542	5	5	M	20	20	11	27
543	5	1	M	14	12	20	25
544	5	2	M	12	12	41	4
545	5	3	M	24	12	38	18
546	5	4	M	10	12	32	21
547	5	5	M	6	12	16	21
548	5	1	F	14	12	39	25
549	5	2	F	12	12	28	12
550	5	3	F	10	12	37	26
551	5	4	F	16	12	43	20
552	5	5	F	10	12	41	16
553	5	1	M	10	8	16	42
554	5	2	M	14	8	40	16
555	5	3	M	12	8	45	10
556	5	4	M	6	8	16	30
557	5	5	M	8	8	7	24
558	5	1	M	14	12	9	22
559	5	2	M	14	12	20	11
560	5	3	M	14	12	22	26
561	5	4	M	12	12	36	19
562	5	5	M	14	12	30	38
563	5	1	M	20	12	41	26
564	5	2	M	8	12	36	2
565	5	3	M	16	12	10	37

14

NO	GS	MN	SEX	PRORG	GRORG	E	N
566	5	4	M	14	12	39	28
567	5	5	M	18	12	32	36
568	5	1	M	6	8	39	13
569	5	2	M	18	8	31	30
570	5	3	M	14	8	21	34
571	5	4	M	16	8	40	13
572	5	5	M	12	8	12	16
573	5	1	M	8	10	28	35
574	5	2	M	16	10	30	24
575	5	3	M	14	10	37	27
576	5	4	M	10	10	32	12
577	5	5	M	12	10	7	38
578	5	1	M	12	6	42	24
579	5	2	M	8	6	32	20
580	5	3	M	12	6	25	20
581	5	4	M	12	6	36	37
582	5	5	M	14	6	38	32
583	5	1	M	14	12	17	13
584	5	2	M	12	12	44	10
585	5	3	M	18	12	6	30
586	5	4	M	10	12	26	31
587	5	5	M	16	12	20	8