

CHAPTER 4

ANALYSIS OF POTENTIAL SCHEMES ACCORDING TO EQUITY AND EFFICIENCY CRITERIA

The Delphi Technique is used to evaluate three schemes, namely, Free Medical care for the Low Income Household (LIC), Social Security Scheme (SSS), and Health Card Program (HCP), under equity and efficiency consideration. The most equitable and efficient scheme and a scheme which has the highest possibility in expanding population coverage are identified as potential schemes to expand to the uninsured. And their strengths and weaknesses are also discussed in this chapter.

The Delphi Technique is an appropriate and effective means in order to quantify qualitative judgements made by experts. Seventeen questions according to equity and efficiency criteria were responded by scoring between 1 and 5.

- 1 means the lowest or least,
- 2 means low or small,
- 3 means uncertain or unable to give an opinion,
- 4 means high or large
- 5 means the highest or largest.

The Thai version of questionnaires were delivered to 12 experts and 10 responses were returned to the researcher by mail. The results were processed into table 10 to 16. Table 10 to 13 are examined in the section 1 and Table 14 to 16 are examined in the section 2.

1. Examination of Score Distribution

Table 10, 11 and 12 presents the frequency of each score (1 to 5) in each question. Table 10 is about Free Medical Care for the Low Income Household. Table 11 is about Social Security Scheme. Table 12 is about Health Card Program.

Table 13 presents the mean score of each question in three respective schemes. The mean score was calculated as the sum of all scores divided by the number of scores in each question. The figure below the second decimal place was omitted. When calculating the mean score, the scores in the following questions should be readjusted when calculating:

- 1.5 Progressiveness in benefit ¹¹;
- 2.4 Adverse selection;
- 2.6 Moral hazard; and
- 2.9 procedure and formality to use services.

As for the scores in the other questions, besides above-mentioned ones, the score 5 which means the highest or largest indicates the most favorable. The degree of favorableness is lessening as the score becomes smaller, and the score 1 which means the lowest or least indicates the least favorable. However, as for the above-mentioned questions (1.5 Progressiveness in benefit, 2.4 Adverse selection, 2.6 Moral hazard, and 2.9 procedure and formality to use services), the score 5 indicates the least favorable or the worst, and the score 1 indicates the most favorable. Thus, the conversion of scores in the questions 1.5, 2.4, 2.6 and 2.9 is made in order to standardize the meaning of scores in all the questions: 5 is

¹¹ Progressiveness in benefit means benefit given in proportion to one's ability to pay. Some argue that progressive benefit is appropriate. If one pays more, one should receive more benefit. In other words, since the rich can pay more, they should get more benefit. And since the poor can not pay more, they should not get equal benefit to the rich. However, the poor often has higher health risk than the rich. Thus, the researcher does not support this argument. Benefit should be given in proportion to one's need regardless one's ability to pay. Thus, high progressiveness in benefit is not equitable.

changed to 1; 4 is changed to 2; 2 is changed to 4; and 1 is changed to 5 ¹².

In table 13, the mean score will mean as follows:

- 1 means the least favorable or lowest,
- score more than 1 to less than 2 means rather unfavorable or low,
- 2 means unfavorable or low,
- score more than 2 to less than 3 means relatively unfavorable or low,
- 3 means moderate,
- score more than 3 to less than 4 means relatively favorable or high,
- 4 means favorable or high,
- score more than 4 to less than 5 means very favorable or high, 5 means the most favorable or highest.

The first analysis is to examine the magnitude and variation of scores in each question. Those are compared among the three schemes (Table 10, 11, and 12). The mean score (Table 13) is also considered.

The score distribution of the Delphi survey demonstrates three characteristics:

- a) great variation among experts' opinions
- b) high frequency on the score 3
- c) clear concentration on particular scores except on the score 3

¹² Diagram 5. Conversion of Scores in Four Questions

1.5 Progressiveness in benefit	1 → 5
2.4 Adverse selection	2 → 4
2.6 Moral hazard	3 → 3
2.9 procedure and formality to use services	4 → 2
	5 → 1

a) Great Variation Among Experts' Opinions

The responses depend on value judgements of experts who worked in the health care system evolving with that complicated dynamics. Thus, the large variation of responses is an expected consequence. Moreover, in the questions in which any quantitative data is not available, the experts have to judge based upon their own experience, knowledge, values and attitudes.

b) High Frequency of the Score 3

Because there might be difficulties to obtain information or to find evidences, the experts can not give clear judgements to some questions. Moreover, although the selected experts are assumed to be knowledgeable in all three schemes, it might be difficult for them to give opinions to a scheme which is outside of their control. For example, managerial efficiency (Q 2.7) of LIC and HCP have high frequency 6 and 7 respectively on the score 3. It might be difficult for the respondents to give opinions about whether or not managements of LIC and HCP are efficient because evidences might not be easily available. However, there are relatively low frequency on the score 3 in the responses of SSS. The information system of SSS might be sufficient and the experts are knowledgeable in SSS.

c) Clear Concentration on Particular Scores Except on the Score 3

In some questions, the scores are beautifully concentrated on one or two particular scores. Such question items might not be highly debated issues and the experts have consensus, or there might be quantitative data available.

Table 10 to 13 are quite self-explanatory, however, a brief comment on the score distribution will be helpful for further discussion.

Equity

1) Possible Growth of Population Coverage

LIC: The scores are dispersed between 4 and 1. Two are uncertain or unable to give opinions in this question. The mean score, 2.5, suggests that the possible growth of coverage of LIC is relatively low.

SSS: The scores are dispersed between 4 and 1. Three are uncertain or unable to give opinions in this question. The mean score, 2.9, suggests that the possible growth of coverage of SSS is relatively low, but higher than LIC.

HCP: The scores are dispersed between 5 and 1, however, six respondents indicate high possibility in the growth of population coverage. The mean score, 3.5, is the highest among three schemes, suggesting relatively high possibility in the growth of population coverage.

2) Increasing Trend of Budget and Finance

LIC: The scores are dispersed between 5 and 2. The mean score, 3.1, suggests that budget and finance of LIC have moderate increasing trend. It can be interpreted that the budget and finance of LIC have increasing trend, but not a rapid one.

SSS: The scores are concentrated on 5 and 4. Seven respondents indicate that the budget and finance are highly increasing. The mean score, 4.2, is the highest among three schemes, suggesting highly increasing trend of the budget and finance in SSS.

HCP: The scores are dispersed between 5 and 1. The mean score, 2.8, is the lowest among three schemes, suggesting that budget and finance of HCP have relatively low increasing trend.

3) Per Capita Beneficiary Expenditure for the Scheme

LIC: Eight respondents indicate that per capita beneficiary expenditure for the LIC is low or the lowest. The mean score is 1.5. Thus, the per capita beneficiary expenditure for the LIC is very low.

SSS: Five respondents indicate that the per capita beneficiary expenditure for SSS is high. One indicate low and two indicate the lowest. The mean score, 3.0, is highest among three schemes, suggesting the per capita beneficiary expenditure for the SSS is moderate, that can be meant adequate.

HCP: Seven respondents indicate that per capita beneficiary expenditure for the HCP is low or the lowest. The mean score is 1.7 which is almost same as that of LIC. Thus, the per capita beneficiary expenditure for the HCP is very low.

4) Progressiveness in Premium

LIC: One person gives 1. And the other respondents give no answer. Since the nature of LIC is the tax-financed welfare program, the beneficiaries do not have to pay any premium. Thus, this question is not appropriate for the LIC beneficiaries.

SSS: Seven respondents indicate that the progressiveness in premium is rather high. On the contrary, three indicate that it is low. The mean score is 3.6 which is that higher than the HCP's mean. The premium of SSS is regarded as fairly proportional to the beneficiary's ability to pay.

HCP: Scores are concentrated on 1 and 2. It can be interpreted that nine respondents think the premium of the HCP is rather expensive. Only one respondent indicate high progressiveness. Thus, the mean score is 1.7 which is not favorable.

5) Progressiveness in Benefit

LIC: The scores are concentrated on 2 and 1. Nine respondents indicate that the progressiveness in benefit is low or the lowest. It means that the benefit provided is not proportional to beneficiaries' ability to pay. In other words, the benefit is provided regardless of beneficiaries' income which is below the poverty line. The mean score after conversion is 4.5 which is highly favorable.

SSS: The scores are concentrated on 2 and 1, which is similar to LIC. Nine respondents indicate that the progressiveness in benefit is low or the lowest. It means that the benefit is provided regardless of beneficiaries' income. The mean score after conversion is 4.2 which is highly favorable.

HCP: The scores are concentrated on 2 and 1, which is similar to the two schemes above. Eight respondents indicate that the progressiveness in benefit is low or the lowest. It means that the benefit is provided regardless of beneficiaries' income. The mean score after conversion, 4.3, is the highest among three schemes and highly favorable.

6) Access and Use of Service

LIC: The scores are dispersed between 5 and 1. The mean score is 2.5. Thus, the access and use of service of the LIC is relatively low.

SSS: Seven respondents indicate high or very high access and use of service. On the contrary, two indicate low access and use of services. The mean score, 3.7, suggests that the access and use of service is relatively high.

HCP: The result is the same as that of SSS. Seven respondents indicate high or very high access and use of service. And two indicate low access and use of services. The mean score, 3.7 which is the same as that of SSS, suggests that the access and use of service is relatively high.

7) Awareness of the Entitled Benefit

LIC: The scores are dispersed between 4 and 2. Although four are not sure or unable to give opinions, the mean score is 3.4 which is the highest among three schemes. Thus, the beneficiaries are relatively aware of their entitled benefit.

SSS: The scores are dispersed between 4 and 1. The mean score, 2.6, is low, suggesting the beneficiaries are not fully aware of their right to receive benefits of the scheme.

HCP: The scores are dispersed between 4 and 2. The mean score is 3.0, suggesting the moderate degree of awareness.

8) Quality of Care

LIC: Five respondents are uncertain or unable to give opinions. Four indicate low quality of care. The mean score is 2.6. Thus, the quality of care of the LIC is low.

SSS: While three respondents indicate high quality of service, other five indicate low quality. The mean score is 2.7. Although it is higher than that of LIC, the quality is regarded as relatively low.

HCP: While three respondents indicate high quality of service, other three indicate low quality. The mean score is 2.9. Although it is the highest among three schemes, the quality is regarded as relatively low.

Efficiency

1) Stability of Financial Status

LIC: While five respondents give 4 that means the financial status of the scheme is stable, four respondents give negative responses. The mean score, 2.9, suggests that the stability of financial status is relatively low.

SSS: The scores are concentrated on 5 and 4. Seven respondents indicate the highest stability of the scheme's financial status. Three indicate high stability. The mean score, 4.7, is the highest among three schemes, suggesting that the financial status is highly stable.

HCP: While six respondents indicate the financial status is instable, only one indicates that the financial status is highly stable. Three are not sure or unable to give opinions. The mean score, 2.0, suggests that the scheme's financial status is not stable.

2) Efficient Use of Fund

LIC: The scores are dispersed between 5 and 2. Four are not sure or unable to give opinions. The mean score, 3.3, suggests that the use of fund is relatively efficient.

SSS: Seven respondents indicate that the use of fund is highly efficient. On the contrary, two indicate that the use of fund is inefficient. The mean score, 3.7, suggests that the use of fund is relatively efficient.

HCP: Six respondents indicate that the use of fund is highly efficient. One indicate that the use of fund is inefficient. The mean score, 3.5, is the same as that of SSS. It suggests that the use of fund is relatively efficient.

3) Risk Pooling

LIC: Scores are dispersed between 5 and 1. The mean score, 3.6, suggests that the risk pooling of the scheme is relatively high.

SSS: Five respondents indicate the highest degree of risk pooling and three indicate high degree of risk pooling. Although two indicate that the risk pooling is low, the mean score, 3.8, suggests that the risk pooling of the scheme is relatively high.

HCP: The scores are dispersed between 5 and 1. The mean score, 3.0, suggests that risk pooling is moderate in HCP.

4) Adverse Selection

LIC: While one respondent indicate very high possibility of adverse selection of the scheme, eight respondents indicate that the adverse selection is low. The mean score is 3.9 which is the highest among three schemes. Thus, the LIC is favorable scheme in terms of the low possibility of adverse selection.

SSS: The scores are dispersed between 5 and 1. The mean score, 3.3, suggests that SSS is favorable in terms of relatively low possibility of adverse selection.

HCP: The scores are concentrated on 5, 4 and 3. Eight respondents suggest very high possibility of adverse selection in HCP. The mean score, 1.8, suggests that HCP is not favorable in terms of frequent occurrence of adverse selection.

5) Potential to Control Costs

LIC: The scores are dispersed between 5 and 1. While four respondents indicate high potential to control costs, the other four indicate low potential. Thus, the mean score is 3.0 which indicates the moderate potential of controlling costs.

SSS: Seven respondents indicate high potential to control costs. Although two indicate low potential, the mean score, 4.1, is the highest among three schemes, suggesting that the SSS has relatively high potential to control costs.

HCP: While five respondents indicate high potential to control costs, three indicate low potential. The mean score, 3.1, suggests that the potential in controlling costs of HCP is moderate.

6) Moral Hazard

LIC: Five respondents give 4 which means high possibility of moral hazard. The mean score, 3.2, suggests that the scheme is somewhat favorable but the moral hazard, especially over-consumption, is undoubtedly occurred because health care is provided free of charge.

SSS: Five respondents give 4 which means high possibility of moral hazard. The mean score, 3.1, is very close to that of LIC, suggesting that the scheme is somewhat favorable but the moral hazard can be observed.

HCP: The scores are dispersed between 5 and 1. The mean score, 2.8, is lower than the other two schemes, suggesting that the scheme is relatively unfavorable in terms of occurrence of moral hazard.

7) Managerial Efficiency

LIC: Six respondents are not sure or unable to give opinions. One give 4 that means high managerial efficiency. And three persons indicated that management is not efficient. The mean score, 2.8, suggests that the managerial efficiency is relatively low.

SSS: Although scores are dispersed between 5 and 2, there is only on response of indicating low efficiency in management. The mean score, 3.6, is the highest among three schemes, suggesting relatively high managerial efficiency.

HCP: Seven respondents are not sure or unable to give opinions. The mean score is 3.1 suggesting the moderate managerial efficiency. However, the mean score is not highly justifiable due to a number of uncertain responses.

8) Freedom of Hospital Choice

LIC: The scores are concentrated on 2 and 1, that means the beneficiaries can not visit health facilities with their own choice. The mean score, 1.4, suggests that the beneficiaries could not choose hospitals freely or have little freedom to choose hospitals.

SSS: The scores are concentrated on 4, 3 and 2. While three respondents indicate that the beneficiaries can choose hospital rather freely, four indicate that freedom of hospital choice is low. The mean score is 2.9 which is the highest among three. The freedom of hospital choice is relatively high.

HCP: The scores are concentrated on 2 and 1. The mean score, 1.6, is the same as that of LIC. It suggests that the beneficiaries do not have freedom to choose hospitals.

9) Procedure and Formality to Use Services

LIC: The scores are dispersed between 5 and 2. The mean score, 2.4, suggests that the scheme is less favorable in terms of complicated procedures and formalities to use services.

SSS: Six respondents indicate that there are not complicated procedures and formalities to use services. The mean score is 3.6 which is the highest among three schemes. It means that the scheme is relatively favorable in terms of procedure and formalities to use services.

HCP: Scores are dispersed between 4 and 1. The mean score, 3.0, suggests that the complicatedness in procedures and formalities to use services is moderate.



2. Potential in Equity, Efficiency and Expansion of Each of Three Schemes

In this section, the researcher will analyze Table 14 to 16. Table 14 presents the scores obtained by multiplying mean weight by mean score in each question. The total score is then obtained by summation of those scores in each scheme. The weight indicates the magnitude of importance of each question item when considering equity and efficiency. Giving the weight to each question item is similar to setting priority when considering resource scarcity. The two sets of weight of each question were given by two experts. The mean weight is the average of two sets of weight given by them. Each score obtained by multiplying mean weight by mean score could more accurately suggest the degree of favorableness of the scheme in each question item. The total score indicates the magnitude of both favorableness and importance of a scheme.

In order to standardize the sub-total and the total score to be the value between 1 and 5 like the rest of the scores, the sub-total is divided by sub-total of mean weight in the equity and efficiency tables respectively. The total score is divided by total mean weight as well. The figure below the second decimal place is omitted.

Table 15 and 16 are elaborated from Table 14. Table 15 presents the question items of equity which are ranked according to magnitude of the mean weight. The schemes obtained the highest score in each question are indicated. Table 16 also presents the question items of efficiency ranked according to the mean weight and the most favorable scheme in each question.

The thesis concerns two conditions in which:

- 1) The potential scheme is expected to be equitable and efficient;
- 2) the potential scheme is expected to have high possibility in growth of population coverage.

As described in the specific objectives 5) and 6)³³, if any scheme could satisfy two conditions simultaneously, such scheme would be the most desirable one. Thus, the scheme which obtains the highest total score in the equity and efficiency questionnaire as well as the highest score in the single question on possible growth of population coverage will be identified as the most potential one. However, the scheme which has the highest equity and efficiency and the scheme which has the highest possibility in growth of population coverage might not be identical.

At the same time, looking into the mean weight, the weight of possible growth of coverage is ranked forth in the equity table. The importance of growth of coverage expansion would not be very critical. This might suggest that improving overall health care infrastructures would be first and foremost concerned. Then, the growth of coverage would be expected after those improvement.

Therefore, it is reasonable to put higher priority on the scheme which obtains the highest equity and efficiency as the potential scheme. Then, the scheme which obtains the highest score in the question on possible growth of population coverage will also be considered as the scheme which has relative potential.

In Table 14, SSS obtained the highest equity and efficiency (3.51). HCP is as the second most suitable choice (2.79) and LIC is rated third in rank (2.69). As for the possibility in growth of coverage, SSS has low possibility of population growth (1.88). On the other hand, HCP obtained the

³³ These objectives are stated in the section 2 of Chapter 1:

- 5) If the schemes in 2) and 3) are found to be identical, assume the scheme would be the most potential one to expand to the uninsured, and explore major advantages and disadvantages of potential scheme.
- 6) If the schemes in 2) and 3) are not found to be identical, assume the both scheme would have the potential to expand to the uninsured, and explore major advantages and disadvantages of those schemes.

highest score in this question (2.27). SSS is the second (1.88) and LIC is the third (1.62).

In Table 15 and 16, firstly, the mean weight which is magnitude of importance of each question item in the domain of equity and efficiency will be considered. Secondly, the scheme which obtains the highest score in each question will be indicated.

As for the questions on equity in Table 15, access and use of service is given the heaviest weight of 1.00. SSS and HCP obtained the highest score of 3.70. Progressiveness in premium is given the second rank with the mean weight of 0.85. SSS earned the highest score of 3.06. Quality of care comes to the third with the mean weight of 0.70. HCP obtained the highest score of 2.03. There are three items on the fourth ranking. The mean weight is 0.65. In the question on possible growth of population coverage, HCP obtained the highest score of 2.27. In per eligible expenditure for the scheme, SSS earned the highest score of 1.95. In awareness of the entitled benefit, LIC obtained the highest score of 2.21. The fifth is increasing trend of budget and finance and SSS obtained the highest score of 2.52. The sixth is progressiveness in benefit. LIC earned the highest score, 2.47.

SSS earned the highest scores in 4 questions. HCP obtained the highest scores in 3 questions including the possible growth of population coverage. LIC obtained the highest score in two questions.

As for questions on efficiency in Table 16, risk pooling is given the heaviest weight of 0.95. SSS had the highest score of 3.61. Secondly, three question items, potential to control cost, managerial efficiency and freedom of hospital choice are ranked with the mean weight of 0.80. SSS earned the highest score in those three questions. The scores are 3.28, 2.88 and 2.32 respectively. Efficient use of fund is given the third rank with the mean weight of 0.75. SSS obtained the highest score of 2.77. The fourth rank is given to Moral hazard with the mean weight of 0.70. LIC obtained the highest score of 2.24. The fifth is adverse selection with the mean weight of 0.65.

LIC obtained the highest score of 2.53. The sixth is stability of financial status with the mean score of 0.60. SSS earned the highest score of 2.82. The seventh is procedure and formality to use services. SSS again obtained the highest score of 1.98.

SSS got the highest scores in 7 question items. LIC appeared in 2 question items. HCP did not obtain the highest score in any question.

In conclusion, as for equity and efficiency characteristics, SSS is the most equitable and efficient scheme. HCP has equity strength but it is not efficient. LIC comes the third in equity characteristics, but it is more efficient than HCP. However, HCP has higher than LIC in total score. As for the possibility in growth of coverage, HCP is the most capable for expanding population coverage among three schemes. Thus, SSS can be identified as the potential scheme. And HCP can be identified as the scheme which has relative potential.

Table 10. Frequency of Scores given by expert opinion:
 -- Low Income card --

Question Topics	frequency on each score				
	5	4	3	2	1
I. Equity					
1.1 possible growth of population coverage	0	3	2	2	3
1.2 increasing trend of budget and finance	1	3	1	4	0
1.3 per capita beneficiary expenditure for the scheme	0	0	1	3	5
1.4 progressiveness in premium	0	0	0	0	1
1.5 progressiveness in benefit	0	0	0	4	5
1.6 access and use of service	1	3	0	2	4
1.7 awareness of the entitled benefit	0	5	4	1	0
1.8 quality of care	0	1	5	3	1
I. Efficiency					
2.1 stability of financial status	0	5	1	2	2
2.2 efficient use of fund	1	3	4	2	0
2.3 risk pooling	3	4	1	0	2
2.4 adverse selection	1	0	1	5	3
2.5 potential to control cost	1	3	2	3	1
2.6 moral hazard	0	5	0	3	2
2.7 managerial efficiency	0	1	6	3	0
2.8 freedom of hospital choice	0	0	0	4	6
2.9 procedure and formality to use services	2	4	2	2	0

Table 11. Frequency of Scores given by expert opinion:
 -- Social Security Scheme --

Question Topics	Frequency on each score				
	5	4	3	2	1
I. Equity					
1.1 possible growth of population coverage	0	4	3	1	2
1.2 increasing trend of budget and finance	2	7	0	0	0
1.3 per capita beneficiary expenditure for the scheme	0	5	1	1	2
1.4 progressiveness in premium	2	5	0	3	0
1.5 progressiveness in benefit	0	1	0	5	4
1.6 access and use of service	2	5	1	2	0
1.7 awareness of the entitled benefit	0	2	3	4	1
1.8 quality of care	0	3	2	4	1
II. Efficiency					
2.1 stability of financial status	7	3	0	0	0
2.2 efficient use of fund	2	5	1	2	0
2.3 risk pooling	4	3	0	1	1
2.4 adverse selection	1	2	2	3	2
2.5 potential to control cost	3	4	1	1	1
2.6 moral hazard	0	5	1	2	2
2.7 managerial efficiency	1	5	3	1	0
2.8 freedom of hospital choice	0	3	3	4	0
2.9 procedure and formality to use services	0	1	3	5	1

Table 12. Frequency of Scores given by expert opinion:
 -- Health Card Program --

Question Topics	frequency on each score				
	5	4	3	2	1
I. Equity	2	4	2	1	1
1.1 possible growth of population coverage	1	2	2	3	1
1.2 increasing trend of budget and finance	0	0	2	3	4
1.3 per capita beneficiary expenditure for the scheme	0	1	0	4	5
1.4 progressiveness in premium	0	0	2	3	5
1.5 progressiveness in benefit	2	5	1	2	0
1.6 access and use of service	0	3	4	3	0
1.7 awareness of the entitled benefit	0	3	4	2	1
1.8 quality of care					
II. Efficiency					
2.1 stability of financial status	0	1	3	3	3
2.2 efficient use of fund	0	6	3	1	0
2.3 risk pooling	2	3	1	1	3
2.4 adverse selection	4	4	2	0	0
2.5 potential to control cost	0	5	2	2	1
2.6 moral hazard	2	3	2	1	2
2.7 managerial efficiency	1	1	7	0	1
2.8 freedom of hospital choice	0	0	1	4	5
2.9 procedure and formality to use services	0	4	3	2	1

Table 13. The Mean Score of Each Scheme

Question Topics	LIC mean Score	SSS mean Score	HCP mean Score
I. Equity			
1.1 possible growth of population coverage	2.5	2.9	3.5
1.2 increasing trend of budget and finance	3.1	4.2	2.8
1.3 per capita beneficiary expenditure for the scheme	1.5	3.0	1.7
1.4 progressiveness in premium	-	3.6	1.7
1.5 progressiveness in benefit	4.5	4.2	4.3
1.6 access and use of service	2.5	3.7	3.7
1.7 awareness of the entitled benefit	3.4	2.6	3.0
1.8 quality of care	2.6	2.7	2.9
II. Efficiency			
2.1 stability of financial status	2.9	4.7	2.0
2.2 efficient use of fund	3.3	3.7	3.5
2.3 risk pooling	3.6	3.8	3.0
2.4 adverse selection	3.9	3.3	1.8
2.5 potential to control cost	3.0	4.1	3.1
2.6 moral hazard	3.2	3.1	2.8
2.7 managerial efficiency	2.8	3.6	3.1
2.8 freedom of hospital choice	1.4	2.9	1.6
2.9 procedure and formality to use services	2.4	3.6	3.0

Table 14. The Final Result Obtained by Delphi Technique

Question Topics	m e a n weight	mean weight x mean score		
		LIC	SSS	HCP
1. Equity				
1.1 possible growth of population coverage	0.65	1.62	1.88	2.27
1.2 increasing trend of budget and finance	0.60	1.86	2.52	1.68
1.3 per capita beneficiary expenditure for the scheme	0.65	0.97	1.95	1.10
1.4 progressiveness in premium	0.85	-	3.06	1.44
1.5 progressiveness in benefit	0.55	2.42	2.31	2.36
1.6 access and use of service	1.00	2.50	3.70	3.70
1.7 awareness of the entitled benefit	0.65	2.21	1.69	1.95
1.8 quality of care	0.70	1.82	1.89	2.03
	sub-total 5.65	sub-total 13.46	19.00	16.55
		sub-total/5.65 2.38	3.36	2.93
II. Efficiency				
2.1 stability of financial status	0.60	1.74	2.82	1.20
2.2 efficient use of fund	0.75	2.47	2.77	2.62
2.3 risk pooling	0.95	3.42	3.61	2.85
2.4 adverse selection	0.65	2.53	2.14	1.17
2.5 potential to control cost	0.80	2.40	3.28	2.48
2.6 moral hazard	0.70	2.24	2.17	1.96
2.7 managerial efficiency	0.80	2.24	2.88	2.48
2.8 freedom of hospital choice	0.80	1.12	2.32	1.28
2.9 procedure and formality to use service	0.55	1.32	1.98	1.65
	sub-total 6.60	sub-total 19.49	23.98	17.69
		sub-total/6.6 2.95	3.63	2.68
Total	12.25	32.95	42.98	34.24
		total/12.25 2.69	3.51	2.79

Table 15. Mean Weight and Highest Score in Equity Questions

	Mean Weight	Scheme with the highest score
1. access and use of service	1.00	SSS & HCP 3.70
2. progressiveness in premium	0.85	SSS 3.06
3. quality of care	0.70	HCP 2.03
4. possible growth of population coverage	0.65	HCP 2.27
4. per capita beneficiary expenditure for the scheme	0.65	SSS 1.95
4. awareness of the entitled benefit	0.65	LIC 2.21
5. increasing trend of budget and finance	0.60	SSS 2.52
6. progressiveness in benefit	0.55	LIC 2.47
(sub total)		(SSS 19.00)

Table 16. Mean Weight and Highest Score
in Efficiency Questions

Efficiency	Mean Weight	Scheme with the highest score
1. risk pooling	0.95	SSS 3.61
2. potential to control cost	0.80	SSS 3.28
2. managerial efficiency	0.80	SSS 2.88
2. freedom of hospital choice	0.80	SSS 2.32
3. efficient use of fund	0.75	SSS 2.77
4. moral hazard	0.70	LIC 2.24
5. adverse selection	0.65	LIC 2.53
6. stability of financial status	0.60	SSS 2.82
7. procedure and formality to use services	0.55	SSS 1.98
(sub total)		(SSS 23.98)

3. Discussion

In this section, firstly, the researcher explores 3 major strengths and 3 major weaknesses of SSS. In Table 14, the question items of which SSS obtained the top three scores, and the question items of the lowest three scores will be examined. The question items of the top three scores would suggest SSS's strengths and the questions of the lowest three scores would indicate relative weaknesses.

The top three scores are:

1. Access and use of service 3.70;
2. Risk pooling 3.61;
3. Progressiveness in premium 3.06.

The three scores from the lowest are:

1. awareness of entitled benefit 1.69;
2. possible growth of population coverage 1.88;
3. quality of care 1.89.

Secondly, the researcher explores 3 strengths and 3 weaknesses of HCP.

The top three scores are:

1. Access and use of service 3.70;
2. Risk pooling 2.85;
3. Efficient use of fund 2.62.

The three score from the lowest are:

1. Per capita beneficiary expenditure 1.10;
2. Adverse selection 1.17;
3. Stability of financial status 1.20.

Thirdly, the possibility of LIC to be a potential scheme is discussed. And finally, the researcher focus on the possibility of growth in population coverage of both SSS and HCP.

3.1 Strengths of SSS

1) Access and use of service

Initially, utilization rate was low because insured workers were not necessarily visiting hospitals with which their employers contracted. This employer's choice of hospitals hinder the optimal use rate. Physical distance of going to hospitals and individual preference of choosing hospitals affected behaviors of insured workers. However, the number of contracted hospitals have been increasing. There are more than 156 contractors of public and private hospitals. The rates of access and use of service have become higher than before.

Beneficiaries under HCP are bound to the first contact at subdistrict health center or district hospitals. Beneficiaries under LIC contact only with subdistrict health center.

2) Risk pooling

Since SSS is compulsory health insurance, it works well to pool risks between the healthy and sick across a large number of regularly employed workers. Initially, the target population of SSS was workers in firms with more than 20 workers. However, since September 1993, SSS expanded the target population to the workers in firms with more than 10 workers. The expansion has contributed to the higher risk pooling. And the average earnings of those workers are sufficient to pay regular premiums. Thus, mechanism of risk pooling in SSS can guarantee high financial viability.

It should be noted that SSS can pool the risks of healthier, stronger and younger workers in the formal sector in comparison with risks pooled by the other two schemes. Beneficiaries under LIC are low-income and rural population who have high health risks. Beneficiaries under HCP have higher health risks than those of SSS as well. In addition, since HCP

is the voluntary health insurance, its risk pooling is lower than that of SSS.

3) Progressiveness in premium

The premium rate is 1.5% of the employees payrolls. This deduction rate seems to be adequate. The adequacy of premium can lead to financial stability.

The contribution overwhelms expenditure. It was reported that compensation paid was 19% of contribution in 1991, 31% in 1992 and 33% in 1993³⁴.

Nittayaramphong, et al. reported that

The fund made positive balance of 7.9 million Baht by year end 1992 (Table 17). The majority of expense, sickness benefit, is well contained through capitation, claims for emergency care and death were minute.

Table 17. Financial Analysis of the Fund in 1991 and 1992
(in million Baht)

	1991	1992
1. Contribution		
Employer and employee	2961.66	6016.23
Government	1216.83	573.11
Total	4178.49	6594.34
2. Compensations		
Sickness benefit	753.2	1823.0
Death	16.9	42.6
Maternity	3.6	189.9
Disability	-	1.4
Total	733.3	2056.9
3. Balance	+3444.79	+4537.44

Source: - Nittayaramphong, et al. 1993. p. 19.
(1993 SSO Annual Report)

Note: Nine months contribution in 1991, full year in 1992

³⁴ SSO. 1993 Report.

However, it should be noted that the progressiveness in premium has a limitation. High income earners are obliged to pay limited contribution. The maximum wage base per day for calculating contribution is five times of the minimal wage rate per day.

$$5 \times 120 \text{ Baht} = 600 \text{ Baht}$$

Calculating the maximum wage base per month is:

$$5 \times 120 \text{ Baht} \times 25 \text{ days} = 15,000 \text{ Baht}$$

1.5% monthly contribution is:

$$15,000 \text{ Baht} \times 0.015 = 225 \text{ Baht}$$

Any workers whose monthly income is more than 15,000 Baht only contributes 225 Baht.

The minimal wage per month is:

$$120 \text{ Baht} \times 25 \text{ days} = 3,000 \text{ Baht}$$

1.5% monthly contribution is:

$$3,000 \times 0.015 = 45 \text{ Baht}$$

Suppose there are two persons A and B. A's monthly income is 100,000 Baht. B's monthly income is 3,000 Baht. Even though A's income is 33 times as much as B's income, A's contribution is 225 Baht which is only 5 times as much as B's contribution (45 Baht). The limited contribution given to high income earners causes inequality.

3.2 Weaknesses of SSS

1) Awareness of entitled benefit

More than 70% of insured workers receive only primary school education ³⁵. They are ignorant not only about insurance principle but also of benefit entitled to them. The low awareness of entitled benefit could cause low utilization at registered hospitals.

³⁵ Nittayaramphong, et al. 1993. p. 21.

44% to 62% of insured workers in Samutprakan did not know anything about the four types of benefit, 11% could not name the registered hospital. These are among other factors for low take up rate³⁶.

Even though the number of registered hospitals have increased to ensure access to the service, there are still sizable number of the insured workers who seek care by self-prescribed drugs, at non-registered hospitals and private hospitals.

2) Quality of care

Mechanism to control quality and adequacy of care is not yet successfully implemented, as the disadvantages of capitation system is potential low quality of care and consumer dissatisfaction. (A flat capitation charge is given per person under its care per year - B700/person/year - regardless of the number of services sought by insured worker)

3) Possible growth of population coverage

The current population coverage is 4.6 million which is 7.8% to the total population. The scheme is expected to cover more people under voluntary provision which is projected to start in late 1994. The voluntary scheme under SSS targets private employees in the urban area. However, it only includes three benefits: maternity; disability; death, and excluding sickness benefit. It should have weakness of adverse selection and administrative costs would be considerably high. Moreover, an unofficial source of information has revealed that a beneficiary has to pay 2,800 baht per year since employer and government do not contribute to the voluntary scheme under SSS. Although more workers would be constantly joining SSS, it would be difficult to expect that the current uninsured could join the new voluntary scheme under SSS.

³⁶ Nittayaramphong, et al. 1993. p. 28.

The researcher believe that the possibility of expanding population coverage under SSS depends on economic development of the country, in particular, expansion of the industrial, manufacturing and service sectors.

3.3 Strengths of HCP

1) Access and use of service

Health care services at all levels and types under the MOPH have been expanded to cover almost all of the rural areas in the past decades. Beneficiaries of HCP can access either subdistrict health center or district hospitals. Some special favors are provided to the HCP holders:

a 10% discount on service charges and special privileges through the "greenChannel" provided for health card members referred from other service-providing units...being a health card member created a feeling of close relationship with service-providing units through some special treatment measures such as an annual medical check-up or infant care and immunization services after birth³⁷.

2) Risk pooling

Risk pooling is the second highest score in HCP in Table 14. However, the score distribution in Table 12 presents a great variation of the experts' opinions. The risks are pooled among 2.7 million HC holders who are mostly middle-income population in rural area. The risk-pooling would be moderate but lower than that of SSS.

3) Efficient use of fund

Eighty percent of the fund is used in service providing units and 20% is used for the management including sales

³⁷ Kiranandana, 1993. p. 48.

promotion and commission. The operation in use of fund is relatively efficient.

3.4 Weaknesses of HCP

1) Per capita beneficiary expenditure

Per capita beneficiary expenditure is 68 baht which is very low compared to that of SSS which is 700 Baht. Among HC holders, per beneficiary expenditure might vary between frequent users and non-users.

2) Adverse selection

There would be high possibility of adverse selection since HCP is based upon voluntary affiliation. Those who purchase the card are chronically ill and expected high treatment expenses, while others who have low risks abstain. There has not been any clear evidence on this matter. However, Kiranandana indicated:

health cardmembers probably tend to be unhealthy or chronically ill and thus utilize the services more often. Furthermore, most of the health cardmembers are in the rural, agricultural sector. They have few constraints on the dates and times of work and thus are apt to be more free to visit the service-providing unit anytime³⁸.

3) Stability of financial status

The stability of financial status of HCP depends on the number of health card sold (purchased). The number of health card sold reached a peak around 1987-1988 with the strong support and promotion of HCP. However, the MOPH policy towards the future of the HCP has become unclear and diversified after 1988. Then the number of the card sold dropped off in recent

³⁸ Kiranandana, 1993. p. 57.

years¹⁹. It can be said that the stability of financial status depends on the MOPH's policy, and it has not been stable recently.

3.5 Possibility of LIC to be a Potential Scheme

Based on the Delphi survey, the total score of LIC is the lowest among the three schemes. Thus, the researcher would not regard LIC as a potential scheme. However, the strengths of LIC should not be overlooked. Table 15 and 16 show that LIC has equity strengths in awareness of the entitled benefit and progressiveness in benefit, and efficiency strengths in moral hazard and adverse selection. LIC is more efficient than HCP (but less efficient than SSS).

It is favorable that the beneficiaries are relatively aware of their entitled benefit and guaranteed equal benefit in proportion to need. And it is significant that there are little incentive for moral hazard and adverse selection.

However, as for per capita beneficiary expenditure, LIC obtains very low score of 0.97. LIC has been considerably under-funded. Public hospitals have to make-up their deficit caused by free care for the LIC beneficiaries by charging CSMBS beneficiaries. This results in inefficiency of overall financing for government welfare programs.

As for growth of population coverage, the possibility of expanding coverage of LIC is low at 1.62. As the Thai economy continues to grow, the absolute number of the poor will decrease. Thus, the population coverage by LIC would not have an ever-increasing trend. However, the huge income gap between the rich and poor can not be easily reduced. Thus, the role of LIC would be still important.

The current LIC actually expired in September 1993. However, it is still valid because new cards have not been

¹⁹ Kiranandana, 1993. p. 53.

issued. MOPH has been considering changing the name of the card. Since the naming of "low income card" sounds humiliating, MOPH is trying to give the new name "health insurance card". Not only changing the name, but also reexamining the policy requirement should be done. If new LIC could cover borderline poor (the poor slightly above the so-called poverty line) by adjusting the policy, it would lead to better equity as it is they who must often left uncovered by any scheme.

3.6 Possibility of Growth in Population Coverage

The possibility of population coverage of SSS is 1.88, and that of HCP 2.27. Although the score of SSS is lower than HCP, the score of HCP is not significantly high either. However, SSS has strengths in terms of equity and efficiency while HCP has good equity characteristics as well. The researcher expects that operation of both schemes will contribute eventually to expanding the coverage to reach the uninsured.

HCP targets the general public, especially the rural population or any workers in the informal sector. SSS has so far limited its target to formal sector workers. Although the voluntary provision will be established, the large expansion of coverage will be still in question and the problems of adverse selection and high administrative costs will be generated. The voluntary provision under SSS could cover only the high income group.

Here, the researcher seeks the possibility that the current uninsured would be covered by either HCP or SSS. As mentioned in the section 3 of the chapter 3, the uninsured group is classified into:

- a) seasonal inactive
- b) unpaid family workers in non-agriculture sector
- c) private employees in non-agriculture sector,

- d) own account workers, unpaid family workers, employer and private employees in agriculture sector,
- e) the unemployed,
- f) children over 13 years old not in labor force.

a) Seasonal Inactive

Seasonal inactive are mainly farmers who can not work during a certain period of time in a year due to climate changes or crop uncertainties. Their annual income is inconsistent. It is difficult to enable them to pay premiums. However, since the premium of HCP (500 baht) could be affordable for them, a strong administrative guidance of MOPH would promote HCP coverage in this group of people.

b) Unpaid Family Workers in Non-agriculture Sector

HCP has the possibility of covering urban family workers. An administrative guidance of MOPH which promote to have them purchase HC is necessary.

SSS will also progressively extend its coverage from firms with 10 workers, then firms with 5 workers, to the self-employed. However, there should be administrative capability and political will. It would take some more years to cover this group by SSS.

c) Private Employees in Non-agriculture Sector

SSS has the possibility of covering private urban employees. This group includes employees who work for firms with less than 10 employees. If firms in which these workers are engaged would increase the number of employers up to 10 or more, the firms would be entitled to join SSS. Or, if SSS extend coverage to firms with 5 workers, the situation would benefit many more workers not currently covered.

d) Own Account Workers, Unpaid Family Workers, Employer and Private Employees in Agriculture Sector

Since HCP's target is the rural population, these workers in agriculture sector would be covered by HCP.

Like the private employees in non-agriculture sector, if firms in which these workers are engaged would increase the number of employers, the firms would be entitled to join SSS. Or, if SSS extend coverage to firms with 5 workers, many more uncovered workers in agriculture sector would be covered.

e) The Unemployed

The unemployed would find it difficult to be covered by HCP as they could not afford the premium. SSS has a future provision of providing benefits to the unemployed. Until that provision will be implemented, LIC would possibly cover the unemployed.

f) Children Over 13 Years Old not in Labor Force

They could only be covered if their parents could become beneficiaries of HCP or SSS, or they become students.

In reality, it is difficult to find a path for expanding coverage to the uninsured. Coverage expansion would be affected by many factors including the country's economic development, improvement of health care infrastructure, improvement of information system, increase of people's awareness of the insurance schemes and the economic situation of household. The thesis can not determine how to expand and what is needed for expansion. The thesis could only indicate that both SSS and HCP, as the potential schemes, would be significant in terms of coverage expansion providing both schemes reinforce the strengths and reform the weaknesses.