

Section 2. Distribution of Education

a. Descriptive Analysis of the Distribution of Education

Equity in the distribution of education means equality in education opportunity. This has been defined in varying degrees of strictness. It means each child of given ability and aptitude has an equal chance to pursue the education and training that suit him best. In strict terms the reference would be inherent ability and aptitude. There is an assumption that the distribution of inherent or inborn traits among the population is not affected by race, socio-economic, location and other environmental variables. In other words each child in the population has an equal chance to be born with a particular level of these inherent traits. Education of all forms - formal and non-formal - builds on these traits so that at later stages of life, it is not possible to distinguish inherent from acquired abilities. In fact performance in IQ tests is found not to be constant over time but to improve with acquired knowledge. In the looser sense equality in educational opportunity is measured in terms of measured ability which has already been affected by environment, socio-economic background and quality of formal schooling. In the absence of information on the distribution of inherent traits in the population equity in educational opportunities can be judged on the basis only of an a priori notion of equality in these traits. Our judgement, therefore, of degree of equality or inequality of educational opportunity in Thailand is based on this a priori distribution. The writers wish to believe that the

distribution is equal, i.e., that each child of whatever background has the same probability distribution of possessing inherent traits as the probability distribution of the population to which he belongs. It means that he has a ten percent probability of being of superior scientific talent if the population has the same probability of producing this much scientific talent. Inequality of opportunity will be judged from the variation in the distribution of educational attainment between population groups. Under perfect equality each group should have the same distribution as the population distribution.

Two sets of data are used to indicate the degree of inequality in the distribution of education in Thailand: a) attendance in school and the highest level of formal schooling attained by those who left the formal school system; b) performance in achievement tests administered to grade III and senior high school pupils. The population was grouped according to variables that are most likely to affect the distribution of opportunity: family income, father's education, location - by region, whether rural (non-municipal) or urban (municipal, metropolis).

First we look at some broad indicators of movement of distribution over time. Table 1 shows that the average level of school attainment has been rising from 1960 to 1975. This results from an increasing rate of attendance at each age group as shown in Table 1 below.

Table 1
Attendance Rate by Age Range
1960, 1975

Age Range	1960	Age Range at Any Program	1975
4-6		4-6	6.3
7-10 in grades 1-4	119.3	7-9	71.4
11-13 in grades 5-7	19.8	10-14	72.4
14-18 in high school and lower vocational schools	17.9	15-19	24.3
20-22 in college technical schools	2.9	20-24	5.1

Source : National Statistical Office 1975, The Children and Youth Survey; Report of the UNESCO Regional Advisory Team for Education Planning in Asia Bangkok, 1965.

Finer indicators of inequality are obtained from the data used in our paper, the 1975 - 1976, The children and youth survey, the 1973 national achievement test of grade III pupils and the 1976 study of achievement of senior high school students who were admitted to college in 1977 by Nitangkorn and Vutisart.

School attendance was very much influenced by location and socio-economic variables as shown by the following cross-tabulations. In Table 2 attendance rate by location for each age range is given. As expected children in the Bangkok Metropolis had the highest rate at each age range or at its corresponding schooling stage -- lower elementary, upper elementary, high school and post-high school. Attendance rate dropped between upper elementary to high school from 72 percent to 24 percent for all children, 90 percent to 60 percent for municipal children, and 70 percent to 18 percent for non-municipal children. For the last two stages, i.e., high school and post-high school, the corresponding drop was 24 percent to 5 percent, 59 percent and 20 percent, and 18 percent to 2 percent. Northeast, the poorest region, showed the lowest attendance rate at all levels and for both municipal and non-municipal area. Only 1.2 percent of its 20-24 year old youths attended school. Compare this to 22 percent for Bangkok.

Those who stopped schooling are not likely to go back to school so that their highest attainment as per survey time might be

Table 2
Rate of School Attendance of Children and Youth
by Age, by Region, by Municipal/Village, 1975

	Total	4-6	7-9	10-14	15-19	20-24
Kingdom	38.9	6.3	11.4	72.4	24.3	5.1
1) Municipal	58.6	27.4	85.2	89.7	59.3	19.8
2) Non-Municipal	35.7	3.7	69.6	69.7	17.7	2.1
Bangkok	56.8	21.2	83.1	89.8	57.6	21.7
1) Municipal	59.2	25.6	85.0	91.0	61.0	24.0
2) Non-Municipal	46.2	6.1	76.0	84.2	40.5	9.7
Central	42.2	9.8	74.2	76.3	53.3	4.8
1) Municipal	57.1	29.6	84.2	88.2	53.3	11.9
2) Non-Municipal	40.6	8.1	73.2	75.1	23.3	3.9
Northern	39.5	6.9	77.5	71.4	19.2	3.0
1) Municipal	62.6	43.8	89.5	88.2	60.1	15.5
2) Non-Municipal	38.0	5.1	76.9	70.4	16.3	2.0
Northeast	29.9	1.1	63.2	61.6	12.3	1.2
1) Municipal	53.5	8.9	82.4	86.0	55.7	14.1
2) Non-Municipal	30.0	.5	62.5	60.7	10.3	.5
Southern	44.3	6.1	72.2	85.1	33.6	3.8
1) Municipal	58.8	27.6	86.4	89.0	59.4	11.7
2) Non-Municipal	42.5	3.9	70.6	84.6	30.1	2.8

Source: National Statistical Office (NSO), The Children and Youth Survey, 1975. Table C₁

Table 3

Percentage Distribution of Children and Youth Not Attending School by Age, Highest Level Attained, Municipal/Non-Municipal

Age Range	Zero Level	Lower Elementary	Upper Elementary	Lower Secondary	Upper Secondary	Teacher Training	Academic	Other Post-Secondary
Total Kingdom								
7-9	99.2	.8						
10-14	.5	98.4	1.1					
15-19	.2	90.7	5.8	2.6	.1	.3		
20-24	.3	83.8	5.3	5.0	.8	2.4	.3	1.8
Municipal								
7-9	100.0							
10-14	2.1	93.6	4.3					
15-19	.2	66.5	19.5	11.3	1.1	.6		
20-24	.9	48.7	15.2	16.3	3.2	3.5	2.1	
Non-municipal								
7-9	99.2	.8						
10-14	.2	98.6	1.0					
15-19	.2	93.6	4.6	1.9		.3		
20-24	.3	89.7	3.7	3.1	.4	2.3		.5
Total Youth	16,656,570							
7-9	3,645,810							
% na	28.6							
10-14	5,408,880							
% na	24.9							
15-19	4,412,360							
% na	73.1							
20-24	3,189,520							
% na	91.1							
% in municipal	14.5							

na is not attending

Source : NSO, The Children and Youth Survey, 1975, Table 4, p. 5



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taken to be their lifetime attainment. Some of these have completed their programs such as academic, teacher training and vocational. The highest attainment of the current cohort over their life can therefore be estimated from their attendance rate. We need not make this estimate since the survey reports this information directly. (Please see Table 3.)

It is seen that majority of school leavers even in the older ages of 20 to 24 completed lower elementary levels only with many very young out-of-school youth aged 7-9 never having attended school. This number amounted to 22 percent of the total population of this age range in 1975.

Family background is another important determinant of school attendance. We obtained from the raw data borrowed from the National Statistics Office (NSO) the following tables showing attendance rate by age, by family income. The effect of income is strongest in the three lowest income brackets to which 64 percent of Thai youths belonged. The difference in attendance rate increases as age or schooling level rises. The lowest income group, for instance, to which 25 percent of youth population belonged, had attendance rates of 67 percent, 62 percent, 24 percent and 10 percent for ages 6-10, 11-14, 15-19, and 20-24. At the highest income bracket the corresponding rates were 91 percent, 93 percent, 77 percent, and 38 percent. Please note that the attendance rate reported by the NSO is lower than in our cross-tabulation since

Table 4
Attendance Rate by Age, by Annual Family Income
1976

Family Income (in Baht)	Total	6-10	11-14	15-19	20-24
0-9,999	43.8	67.1	62.0	24.1	10.1
10,000-14,999	57.2	72.6	75.7	41.8	14.2
15,000-19,999	62.2	77.8	70.2	57.1	20.5
20,000-29,999	65.0	82.4	88.1	59.7	22.6
30,000-39,999	65.4	84.1	90.6	62.2	22.9
40,000-49,999	66.7	88.4	90.8	67.9	24.2
50,000-59,999	64.5	85.8	89.2	63.5	26.6
60,000-69,999	64.8	89.5	88.6	64.2	29.1
70,000 and above	69.2	91.2	92.8	76.7	37.5
Weighted Average	57.9	75.4	75.6	49.3	20.6

Source : Our cross-tabulations of raw data of the NSO , The Children and Youth Survey, 1976.

Table 4a

Percentage Distribution of Population by Age
and by Annual Family income 1976

Family Income	Total	6-10	11-14	15-19	20-24
0- 9,999	24.77	30.52	24.95	22.18	18.41
10,000-14,999	22.63	25.30	22.89	22.18	18.15
15,000-19,999	17.12	16.69	20.39	16.42	14.30
20,000-29,999	12.85	10.60	12.22	14.56	14.93
30,000-39,999	6.64	5.38	5.95	7.37	8.69
40,000-49,999	4.31	3.24	3.76	4.70	6.38
50,000-59,999	3.24	2.30	2.82	3.57	5.11
60,000-69,999	2.43	1.70	1.98	2.66	4.04
70,000 and above	6.01	4.26	5.02	6.36	9.99
Weighted Average	100.00	100.00	100.00	100.00	100.00

Source : Our cross-tabulations of raw data of the NSO, The Children and Youth Survey, 1976.

our data consisted of unmarried children of the head of households only. The difference in attendance rate between the two reports reflects the effect of relationship and civil status on school attendance. This effect is more precisely shown in the empirical test of the model. Cross-tabulations with other socio-economic variables are not given here since they should have the same pattern as that of income.

b. Distribution of Learning at Grade III and High School V.

The quality of education offered each child differs so that amount learned also differed. It depends on his total environment. The educational content of environment varies substantially according to location and socio-economic background. Schools differ in quality of instruction and available instructional materials. Family income exerts further effect on learning by determining the physical and mental health of the child. It is not uncommon in poor situations in LDCs that children have not enough to eat. Hunger must have a direct or immediate impact on the rate of learning in school. Persistent malnutrition would have longer and more profound effects on the whole process of education, including its effect on the development of brain cells during infancy. This variation in learning environment is reflected in an unequal distribution of measured scholastic achievement among population groups. The chapter by Nitongkorn and Vutisart evidences this very clearly. For this introductory chapter we present some

descriptive statistics used in their analysis. Their cross-tabulations of mean scores by type of institution - whether private, supported by Ministry of Education, by municipal or by provincial (changwat) governments; father's occupation and location are reproduced here.

The distribution of achievement in the tests follow the same pattern as school attendance. Apparently children in urban environment whose fathers work as government officials and as professionals learned more (of what the tests measured) than children of farmers. The latter scored about 60 percent of the mean score of urban elite children. There is also substantial differences in scores between changwat and Ministry of Education (MOE) schools with mean of 51 percent and 83 percent, respectively.

The distribution of MS 5 scores is likely to be subject to selection bias. A much smaller proportion of youth in rural areas and from poorer socio-economic background reached Maw Saw 5. The few to reach this level probably possessed a different set of traits from the typical student for them to be able to survive the disadvantages of their environment. Thus we find that the variation in mean score by region, father's occupation or by mother's education does not follow the same pattern as for grade III. Farmers' children did as well as professional children. Furthermore, there was not as much regional variation and

Table 5
 Distribution of Students by Region and Father's Occupation
 1975

Occupation	Lower than 2.5	(1) 2.50-2.99	(2) 3.0-4.0	(1) + (2)
Professional	43.1	37.1	19.8	56.9
Administrative	37.1	44.0	18.9	62.9
Clerical	42.1	38.6	19.3	57.9
Sales	37.6	38.5	23.9	62.4
Farmers	46.9	35.0	18.1	53.1
Transportation	39.5	41.9	18.6	60.5
Craftsmen	41.7	43.7	14.6	58.3
Services	25.0	37.5	37.5	75.0
Laborers	49.0	31.9	19.1	51.0
Unclassified	46.2	39.1	14.7	53.8
Region				
Bangkok	42.1	38.1	19.8	57.9
Central	41.7	36.9	21.4	58.3
North	29.6	43.0	27.4	70.4
Northeast	42.2	37.8	20.0	57.8
South	47.3	42.7	10.0	52.7
EAsT	34.4	34.4	31.2	65.6

Source: Nitongkorn and Vutisart's Chapter, Tables 15 and 17, pp. 48-49, 52.

Bangkok youth did only as well as other students. Southern region did best.

We find location to be a very strong explanatory variable of school attendance especially at higher levels. This is mainly because of the greater distance to schools of rural populations especially of those in the Northeast. Two supplementary tables are presented to show the effect of distance on schooling. Table 6 gives the distribution of students by distance to school. It is shown that 63 percent of students were located within 3 kilometers of their schools. Only 16 percent of students were farther than six kilometers.

Table 7 gives a breakdown of total cost of schooling at various levels including transport and additional living expenses for students from municipal and non-municipal locations. Total cost is, as expected, higher the higher the level. Cost of transport and food taken out of the home formed a very large proportion of the total at every level (56 to 78 percent). Total cost was higher for non-municipal students.

The effect of financial constraint as determined by income and cost of schooling is shown in Table 8 which describes the reasons for not attending school given by those not enrolled. Eighty-three percent of the sample cited financial reason for their non-attendance in school. The percentage was higher the higher the schooling level.

Table 6
Percentage Distribution of Children and Youth Attending School
by Type of School and Distance to School, 1975

<u>Type of School</u>	<u>Total of Both Sexes</u>	<u>Less than 3 km.</u>	<u>3-6 km.</u>	<u>More than 6-10 km.</u>	<u>More than 10 km.</u>	<u>Unknown</u>
Public School	52.00	33.58	9.39	4.27	4.43	.32
Private School	<u>48.00</u>	<u>29.81</u>	<u>11.30</u>	<u>4.02</u>	<u>2.46</u>	<u>.39</u>
Total:	<u>100.00</u>	<u>63.39</u>	<u>20.69</u>	<u>8.29</u>	<u>6.89</u>	<u>.72</u>

Source: NSO, The Children and Youth Survey, 1975, Table 7A.

Table 7
Average Annual Expenditure on Education per Person by Level of Education Attended and Type of Expenditure

	LEVEL OF EDUCATION ATTENDED										
	Elementary & Kindergarten or Equiv.		Secondary or Equivalent			University			Short-Cycle		
	Kindergarten	Lower Elementary	Upper Elementary	Lower Secondary	Upper Secondary	Higher Vocational	Academic	Technical	Teacher Training	Vocational	Unknown
MUNICIPAL											
Public School	558	456	494	577	714	841	1,094	909	1,015	2,515	-
1. Transportation	1,317	897	1,236	1,609	2,463	2,698	4,118	3,315	2,573	2,282	-
2. Food taken outside home	79	114	174	240	341	407	572	640	432	200	-
3. Books, materials and equipment	191	108	107	265	285	494	1,442	571	1,053	382	-
4. School Fees	163	163	220	278	314	371	441	251	394	350	-
5. Uniform	137	39	64	105	117	291	407	653	224	200	-
6. Other	2,445	1,763	2,337	3,215	4,234	5,162	8,074	4,529	5,761	5,599	170
7. Total	774	689	806	650	764	886	658	1,086	-	-	-
Private School											
1. Transportation	1,434	1,345	1,613	2,044	2,812	3,103	3,608	4,304	-	1,561	431
2. Food taken outside home	109	153	210	264	380	446	541	717	-	1,600	31
3. Books, materials and equipment	745	702	761	857	1,274	2,710	2,855	4,427	-	2,162	128
4. School Fees	163	204	247	288	382	384	382	466	-	400	-
5. Uniform	73	57	74	93	124	217	377	821	-	-	-
6. Other	3,318	3,150	3,516	4,212	5,672	7,748	8,631	11,521	-	-	-
7. Total											

Source: NSO, The Children and Youth Survey, 1975, Tables 9A and 9B.

Table 7
Average Annual Expenditure on Education per Person by Level of Education Attended and Type of Expenditure
(Cont'd)

	LEVEL OF EDUCATIONAL ATTENDED												
	Elementary & Kindergarten or Equiv.			Secondary or Equivalent			University			Other			
	Kindergarten	Lower Elementary	Upper Elementary	Lower Secondary	Upper Secondary	University	Upper Vocational	Lower Vocational	Technical	Teacher Training	Short Course	Unknown	
NON-MUNICIPAL													
Public School													
1. Transportation	300	418	528	324	1,481	1,930	1,071	2,236	1,333	600	-	-	
2. Food taken outside home	514	386	549	1,255	2,545	2,684	2,932	2,307	3,235	1,920	-	-	
3. Book, materials and equipment	33	64	145	230	373	376	1,078	942	637	20	-	-	
4. School Fees	106	61	63	187	205	209	761	1,070	1,246	149	-	-	
5. Uniform	109	110	139	236	391	409	322	562	548	200	-	-	
6. Other	-	36	57	113	147	234	1,392	340	361	506	-	-	
7. Total	1,062	1,075	1,039	2,925	5,147	5,962	8,854	7,937	7,377	2,759	-	-	
Private School													
1. Transportation	661	601	547	651	836	1,020	978	-	-	752	-	-	
2. Food taken outside home	782	730	390	1,133	1,689	1,751	2,820	-	-	1,600	132	-	
3. Book, materials and equipment	54	105	184	232	365	325	376	-	-	50	-	-	
4. School Fees	426	378	421	468	866	2,639	3,504	-	-	2,500	-	-	
5. Uniform	146	176	233	301	299	328	347	-	-	-	-	-	
6. Other	137	42	68	99	95	262	250	-	-	1,500	-	-	
7. Total	2,206	2,033	2,043	2,934	4,060	6,384	7,376	-	-	6,592	-	-	

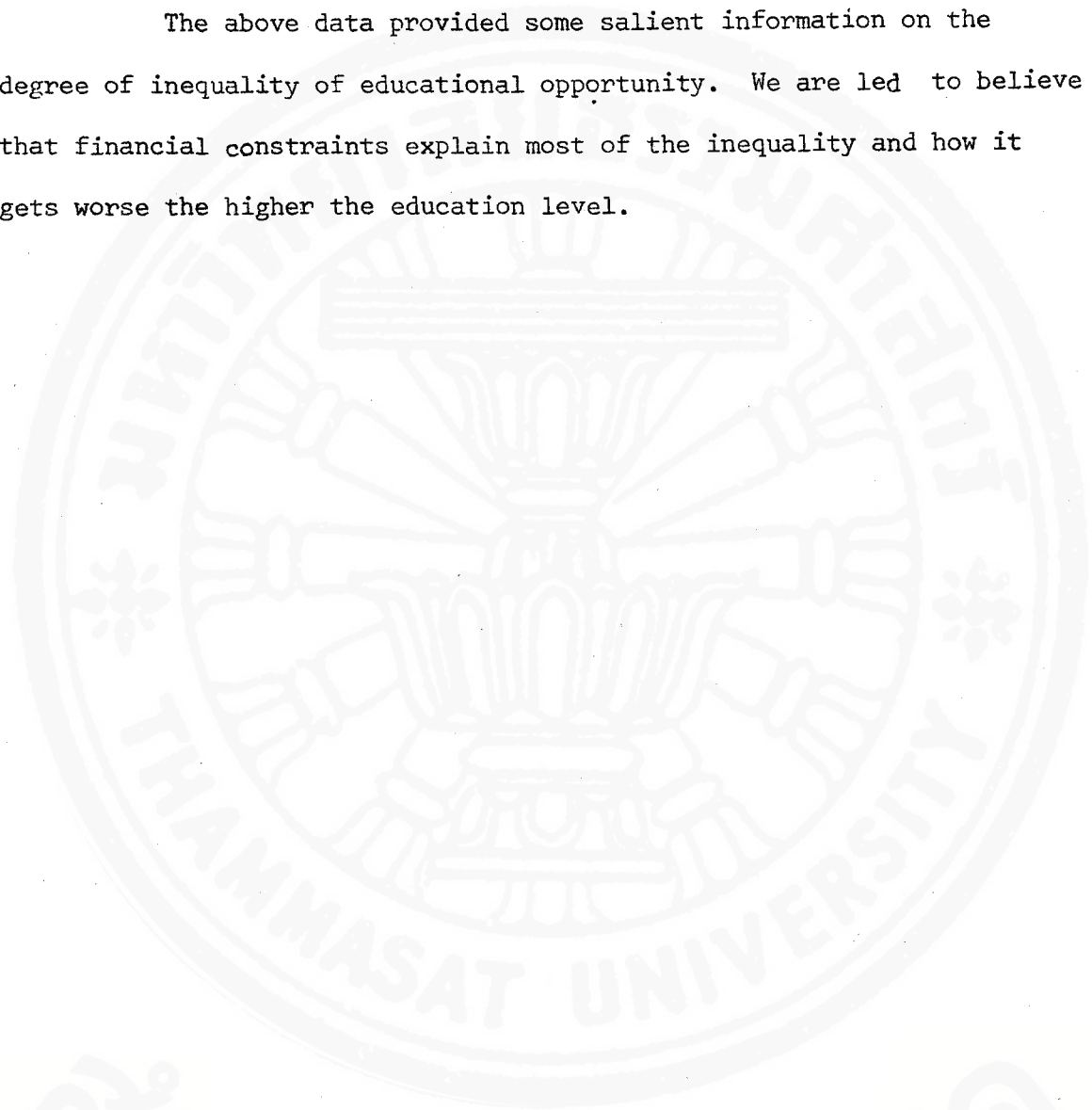
Source: NSO, The Children and Youth Survey, 1975, Tables 9A and 9B.

Table 8
Percentage Distribution of Children Not Attending School
by Age and Reasons for Not Attending School, 1975

Reasons	<u>Total for Both Sexes</u>	<u>7-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>
1. Sickness, disability/ mental handicap	1.38	.002	.24	.62	.51
2. No financial support	82.75	.12	6.09	29.34	47.18
3. Others (no interest, inadequate qualifications, etc.)	15.87	.07	1.43	6.19	8.18
	—	—	—	—	—
Total:	<u>100.00</u>	<u>.19</u>	<u>7.76</u>	<u>36.15</u>	<u>55.87</u>

Source: NSO, Children and Youth Survey, 1975, Table 5A.

The above data provided some salient information on the degree of inequality of educational opportunity. We are led to believe that financial constraints explain most of the inequality and how it gets worse the higher the education level.



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