

Education of Farm Children*

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Abstract: In this paper we examined educational participation by farm children, from two small areas in the West of Ireland. There has been a dramatic increase in participation, especially since the introduction of free post-primary education in 1967. This reflects the changing ability of parents to afford education for their children. Participation on smaller farms was lower than on larger farms up to 1967, but since that time it has almost equalised. Differences between those from smaller as compared to larger farms up to 1967 reflected the relative ability of parents to afford education. The pattern since 1967 shows how public policy can bring about equalisation of opportunities between families. Differences associated with children's occupations still persist. Non-farming daughters had more education than non-farming sons, who are more concentrated in manual occupations which have lower formal education requirements. In attempting to ensure access to occupations parents give daughters more education. Sons entering farming had least education but their access to farming is assured by gift or inheritance. The differential allocation of education reflects the efforts of parents to equalise occupational opportunities among their children.

I INTRODUCTION

Participation in education¹ and its relationship to occupational structure has been the subject of recent Irish social research. Interest in this subject owes much to the dramatic expansion in the education system over the past 20 years. The educational participation levels of 15 year olds has risen from 54 per cent in 1966 to 87 per cent in 1981, with females having higher rates up to the end of the senior school cycle (Murphy, 1983). Studies of educational participation have focused on differential participation and achievement levels between occupational categories, usually grouping occupations to approximate social class categories. Despite Government reforms aimed at promoting

1. Education in this paper refers to formal education.

*The data on which this study is based are from a study part funded by the Commission of the European Communities.

equality², disparities in participation in relation to social class and gender have been found to persist. Studies (Rottman *et al.*, 1982; Clancy, 1982; Whelan and Whelan 1984; Greaney and Kellaghan, 1984) have shown that the children of those in higher socio-economic groups are more likely to complete second-level schooling than those in the lower socio-economic groups. Children of upper and middle class parents are markedly over-represented in third-level institutions. Educational participation is also sex selective. Hannan, *et al* (1983) and Breen (1984) have shown that girls remain longer in second-level education than boys, but are slightly less likely to go on to third-level education.

The evidence shows that the quantity and quality of education which a child receives is related to his/her sex and parents' class position. Moreover, the expansion of education and the decline in employment in family businesses have resulted in educational credentials becoming important determinants of occupational opportunities. As Rottman, *et al* (1982) point out:

Education in the 1920s evinced only a slight impact on a person's adult situation; only for those from the middle classes with parents able to afford a private secondary school or university education did it prove decisive. By the 1970s, social-class linked packages of educationally determined skills and qualifications differentiated between skilled and unskilled manual workers, between professionals and routine service workers (p. 48).

Farmers as an occupational group vary widely in terms of the resources they control so they are not easily classified along conventional status, skilled/unskilled or manual/non-manual dichotomies. Studies of educational participation have dealt with this problem either by treating farmers as a separate occupational category or grouping farmers within holding size categories with other non-farming occupations. The problem with the former method is that it masks the considerable heterogeneity within the farm population. The latter approach, on the other hand, enables us to say little about different categories of farmers *per se*, because they are amalgamated with other non-farming occupations.

Rottman *et al.*, (1982) taking farmers as a separate category have shown that the participation rate³ for farmers' children aged 14-19 in full-time education almost doubled in the period 1961-71 (from 28% to 55%), was higher than the average for other social groups, and was only exceeded by the rate for children of professionals, employers and managers. The same study also showed that

2. These include the introduction of free second-level education and transport in 1967, raising the minimum school leaving age from 14 to 15 years in 1972 and considerable capital investment in secondary schools throughout the past two decades.

3. Expressed as a percentage of the available cohort of children from each social group who are in full-time education.

farmers' children were roughly equally represented in secondary and vocational education, while Breen (1984) found that slightly more than half (56%) were in secondary schools. Comparing attainment levels among occupational groups over the 1980-82 period Breen found that more than two-thirds of farmers' children attained Leaving Certificate standard. By contrast, only 38 per cent of the offspring of semi/skilled manual parents attained that standard.

Taking these statistics at face value one could form the impression that farmers' children fare exceedingly well in regard to participation and attainment in second- and third-level education. However, as Rottman *et al.*, readily admit, these data conceal considerable variation among the farming population. Hannan (1970) in a study of young people in County Cavan provides information on educational participation for different levels of farm resources. Hannan examined the educational participation of farm children by the rateable valuation⁴ of the farm. He found substantial variations between valuation categories and between males and females in relation to educational participation (Table 1).

Table 1: *Educational participation of male and female farm adolescents, by valuation of farm*

<i>Post-primary education received, if any</i>	<i>Valuation of farm</i>			
	<i>Under £15</i>	<i>£15-£29</i>	<i>£30-£44</i>	<i>£45 and over</i>
	<i>%</i>	<i>%</i>	<i>%</i>	<i>%</i>
Males				
Secondary	21.7	17.4	53.1	55.9
Vocational	24.3	31.3	25.0	14.7
Primary only	52.2	50.7	21.9	29.4
Total	98.2	99.4	100.0	100.0
N	115	114	32	34
Females				
Secondary	29.2	36.6	46.2	73.5
Vocational	50.0	46.2	30.8	17.6
Primary only	20.0	17.2	23.1	8.8
Total	99.2	100.0	100.1	99.9
N	120	145	39	34

Source: Hannan (1970).

4. Valuation is a measure of the productive capacity of the farm.

Both sexes had higher proportions in post-primary education at higher valuations. For females especially, the level of farm valuation was closely related to the type of post-primary education received, the proportions in secondary education consistently rising and those in vocational education falling as valuation increased. This trend was less marked in the case of males. What is most striking, however, was the difference between the sexes with regard to the overall level of participation in post-primary education. Even at the lowest level of valuation, four-fifths of females had some post-primary education rising to more than nine-tenths in the higher categories. Up to IR£30 valuation more than half the boys had no post-primary education. The proportion of males with no post-primary education even at high valuations was greater than for females in the lowest valuation category.

Hannan attributes sex differences in educational participation to the differential obligations of boys and girls on farms, more boys having to stay at home and work on the farm on completion of primary education. Nevertheless of those moving off the farm, girls still received a better education — 91 per cent of girls and 78 per cent of boys receiving post-primary education. Hannan concludes that his results confirm an earlier observation by McNabb (1964) that farm females are given a better education to enhance their occupational and marriage opportunities outside their own area, as employment opportunities in rural areas are likely to be scarce.

The educational level of farmers, as revealed by Census and other data, are consistent with Hannan's findings for those taking up farming. The 1971 Census revealed that 95 per cent of farmers farming less than 12 hectares had no post-primary education, but this decreased to 51 per cent for those farming more than 80 hectares. The corresponding figures for farmers' sons are 81 and 36 per cent.

A more recent survey of farm operators carried out in An Foras Talúntais in 1980 (Frawley, 1985) showed that 76 per cent of all farm operators had primary education only. The proportions ranged from 81 per cent on farms of less than 12 hectares to 50 per cent on those of over 40 hectares. Although the levels have improved since 1971, they are still considerably lower than for most other social categories. Comparing the educational attainments of heads of households from the Household Budget Survey of 1983, Rottman *et al.*, (1982, Table 2.4, p. 65) found that the educational attainments of all but the largest farmers (over 40 hectares) were comparable to those of the semi-skilled and unskilled working class categories, and that farmers with less than 12 hectares had the lowest levels of all, 96 per cent having no post-primary education.

II THE PRESENT STUDY

In this paper we examine the education of farm children from the perspective

of its influence on their occupational opportunities and the role of parents in deciding how much formal post-primary education their children receive. The outcome of these decisions is reflected in differential participation in education. We explore differences (a) over time, (b) between different size farms, (c) between sexes and (d) between those entering farming and those entering non-farming occupations. The central thesis is that these differences can be explained by the relative ability of parents to afford education and by parents' attempts to equalise opportunities within families.

We report on the sons and daughters of farmers from two areas in the West Region (Counties Galway and Mayo) who entered the labour force between the 1930s and 1980s. These data are from a wider study on integrated rural development, which was part funded by the EC Commission. The occupational structure of the study areas and intergenerational social mobility were among the central foci of the study. Hence we were interested in education as a means to influence access to occupations.

Study Areas

Two small study areas were chosen for the multi-dimensional household inquiry, relating to the rural development study. This design was chosen to facilitate an understanding of the local context in which disadvantage was experienced by residents of a "Less Favoured Area". Small areas also facilitated intensive consultation, which would have been much more expensive with a widely scattered sample.

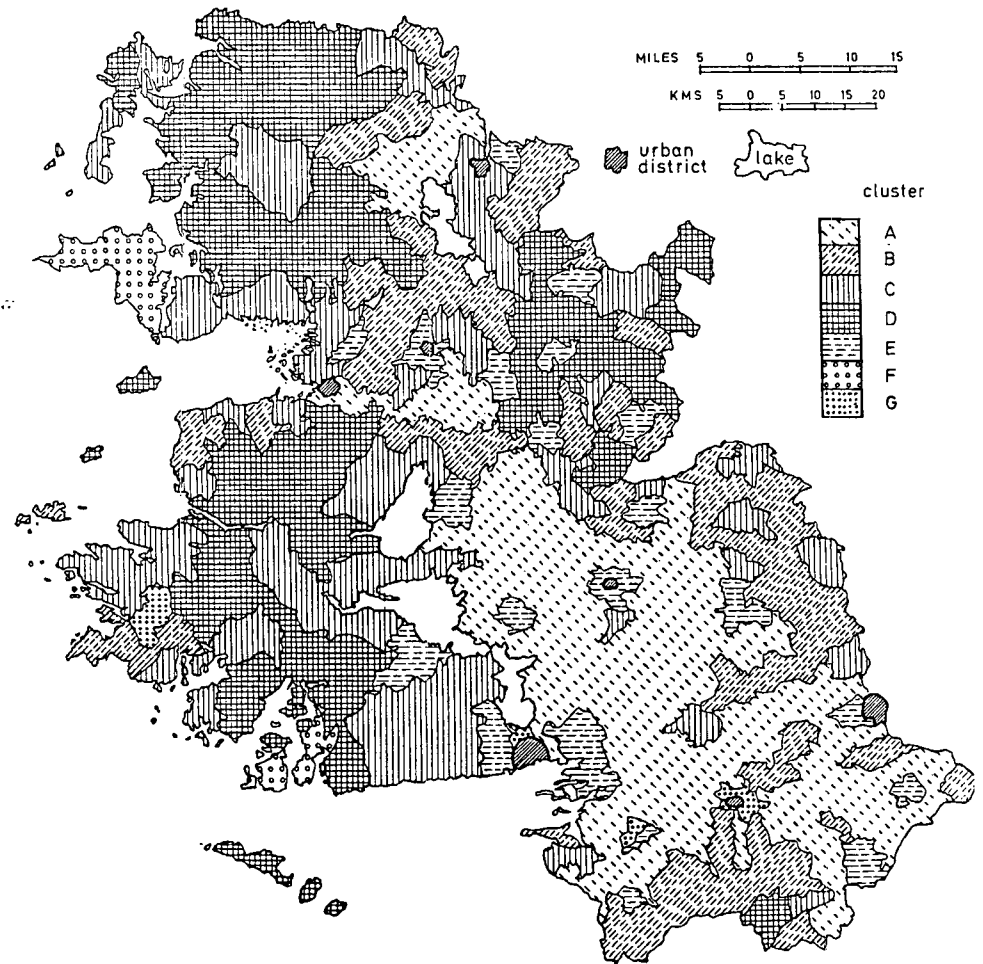
Sampling procedures were followed to ensure that each study area was representative of a wider rural area. Cluster analysis was used to allocate the rural District Electoral Divisions, in the West Region, into seven clusters, shown in Figure 1. (The variables used in this analysis related to agriculture, employment, demography and household amenities). A study area was selected from within each of the two largest clusters (A and B in Figure 1) which, between them, included 217 out of a total of 363 District Electoral Divisions. The study areas were selected so as to:

- (a) be within the local social unit of a parish;
 - (b) be close to the centroid of a cluster;
 - (c) make it feasible to use an existing research station as a base for fieldwork.
- In each of the two study areas data were collected for all households.

Data then relate to full enumerations for the study areas and also to sample estimates for the clusters represented. It is likely that the estimates of variance within a study area would, if biased, be biased downward. Hence tests which show no significant differences between the sample estimates could be accepted readily, while apparently significant differences should be treated with caution. No significant differences were found between the study areas in respect of the

size distribution of farms, the structure of occupations for children of farm households or for the data on participation in education which are reported below. The results presented below relate to the pooled data for both study areas. These represent the two clusters combined and hence most of the rural areas in the eastern half of the West Region, (see Figure 1). Tests of statistical significance should not be interpreted rigorously as the samples of households are not random, but they give a useful indication of differences which are likely to be important.

Figure 1: *Location of the seven clusters in the West Region*



Data Base

The data, on which the analysis is based are from a 1981-82 survey of all households in two small areas in the West Region. Personal and occupational data were collected in each household for members of the youngest generation who had entered the labour force⁵ regardless of present location or age. Labour force entrants who were children of farmers numbered 1,110 in all (607 male and 503 female) and data relating to these are analysed below. All had completed formal education and had at least one occupation since leaving school. Our analysis examines participation in and duration of second-level education. The data are inadequate to explore differences in third-level educational participation.

Participation Trends

Table 2 shows participation in post-primary education for sons and daughters of farmers over four time periods. The final period coincides with the introduction of free post-primary education in Ireland in 1967, and the increase in age for compulsory school attendance from 14 to 15 years in 1972. Offspring are divided into three categories according to present occupation, the number of females in farming occupations being too small to treat them as a separate category. Evidence from previous studies is confirmed by the data in Table 2. Participation in post-primary education has increased dramatically among all categories over the period, especially in the period 1952-66 and since 1967. Females have a higher level of participation than males and non-farm males are, since 1937, better educated than farmers. The duration of post-primary education has also risen, from an average of 2.2 years in the 1952-66 period to 4.16 since 1967. Gender and occupational differences are also evident in the

Table 2: *Percentage of farm offspring with some post-primary education by period of entry to the labour force and current occupation*

<i>Period</i>	<i>Sons</i>		<i>Daughters</i>	
	<i>Farming</i>	<i>Non-farming</i>	<i>Non-farming</i>	<i>All</i>
Up to 1936	6.2	5.0	10.9	7.9
1937-1951	10.7	14.0	37.2	24.5
1952-1966	26.5	52.4	68.6	55.3
1967 onward	70.8	91.1	94.6	91.6

5. A generation is considered to have entered the labour force if all, or at least three of its members, have done so.

duration of post-primary education. For the period 1967 onward the mean number of years for farm males, non-farm males and females respectively were 2.71, 3.79 and 4.73.

Since farm size is likely to be an important influence on the capacity to provide post-primary education, we now turn to an examination of this factor for each of the three categories of offspring.

III INFLUENCE OF FARM SIZE OF ORIGIN

Sons in Farming

Post-primary education up to 1936 was negligible regardless of parents' farm size. The percentage with any post-primary education has increased consistently over later periods (Table 3). In the 1952-66 period the difference between those from small (less than 12 ha) and other farms had increased, while differences with regard to participation have practically disappeared in the period since 1967. The size of parents' farm no longer influences the participation of farming sons in post-primary education. The difference in participation between farm size of origin, which was emerging in the 1952-1966 period, was eliminated subsequently. The increase in participation and the equalisation since 1967 coincided with the introduction of the State policy of free post-primary education and the raising of the age of compulsory school attendance.

Table 3: *Percentage of farming sons who had some post-primary education, by period of entry to the labour force and by size of parents' farm*

<i>Period</i>	<i>Size of parents' farm</i>		<i>Difference¹</i>
	<i>Up to 12 ha</i>	<i>Over 12 ha</i>	
Up to 1936	5.0	8.3	ns
1937-1951	9.7	12.0	*
1952-1966	18.2	33.3	***
1967 onwards	70.0	71.4	***

1. Using *, ** and *** for 5, 1 and 0.1 per cent significance levels respectively, based on the chi-square statistic. This statistic cannot be interpreted rigorously as explained above, when discussing the selection of study areas.

Sons in Non-Farming Occupations

Participation of non-farming⁶ sons in post-primary education also increased

6. Non-farming refers to the non-farming occupation of the offspring, in this case sons.

over time (Table 4). Increased participation for those from farms over 12 hectares had emerged by the 1937-51 period, so that they had higher participation than sons from smaller farms, by 17 percentage points. The difference for 1952 to 1966 was even larger, at 31 percentage points, even though there was a dramatic increase in participation in this period by sons from small farms. In the period 1967 onward the difference between small and other farm origins was reduced to 13 percentage points.

Table 4: *Percentage of non-farming sons who had some post-primary education, by period of entry to the labour force and for 2 size category of parents' farm*

<i>Period</i>	<i>Size of parents' farm</i>		<i>Difference</i>
	<i>Up to 12 ha</i>	<i>Over 12 ha</i>	
Up to 1936	4.3	5.9	ns
1937-1951	6.1	22.7	*
1952-1966	36.6	67.6	***
1967 onward	84.0	96.8	**

A more detailed breakdown by farm size for the later periods (Table 5) shows that in 1952 to 1966 there were big differences in participation between all three size categories. Sons from larger farms had higher participation. In the period 1967 onward, participation by sons from large farms was no higher than for medium farms, while the gap between small and other farms was reduced. The persistence of a gap between small (under 12ha) and other farm sizes, could be explained by the relative inability of parents, with small farms, to forgo the labour of a son. This could arise either because such labour was needed more on small than on large farms, or because those on smaller farms were less able to forgo a son's earnings from work outside the family farm. While smaller farms have greater underemployment of labour (Conway and Higgins, 1979, Part 2), it is conceivable that on these farms parents might be more likely to take non-farming sons out of school to assist on the home farm. The lower level of capitalisation on smaller farms, and the associated labour-demanding

Table 5: *Percentage of non-farming sons who had some post-primary education, by period of entry to the labour force and for 3 size category of parents' farm*

<i>Period</i>	<i>Up to 12 ha</i>	<i>12-20 ha</i>	<i>20+ ha</i>	<i>Difference</i>
1952-1966	36.6	58.1	80.6	***
1967 onwards	84.0	98.1	95.0	*

techniques of production, could conceivably increase their need for an extra person. A more likely possibility is that non-farming sons might assist on the home farm for a period but move to a non-farming occupation later. In order to check this possibility the data were re-examined, excluding non-farming sons whose first occupation was assisting on the family farm. Their exclusion did not materially alter the results given in Tables 4 and 5 above.

A colleague raised the possibility of differences in parental motivation, in relation to education of their children, as a possible explanation for lower participation by children from smaller farms. If this hypothesis were accepted it would not detract from farm size as an influential variable, but one would have to explain how farm size differentially conditioned parents' motivation. One would also need to explain how free second-level education altered assumed motivational differences. However there is no difficulty in seeing how the introduction of free post-primary education made it easier for poorer farm families to afford such education. The evidence points consistently, and directly, to the poorer economic circumstances on smaller farms as the reason why their non-farming sons tended to receive less formal education.

In the later periods, with higher participation, our numbers are adequate to examine the years of post-primary education for those participating. Table 6 contains the percentage of non-farming sons attending for more than three years. This increased with parents' farm size in the 1952 to 1966 period. Since post-primary education was not free at this time the differences probably reflect differences in parents' ability to pay for education or forgo the earnings of sons. In the period 1967 onward these differences disappear coinciding with the introduction of free post-primary education. While the increase from 14 to 15 in the age for compulsory school attendance, in 1972, could have influenced participation in post-primary education, it could not explain the changes revealed in Table 6. The equalisation from 1967 onward is attributable to the availability of free post-primary education.

Table 6: *Percentage of non-farming sons with post-primary education who attended for more than three years, by period of entry to the labour force and by size of parents' farm*

Period	Size of parents' farm			Difference
	Up to 12 ha	12-20 ha	20+ ha	
1952-1966	23.1	32.0	56.0	*
1967 onwards	47.6	48.1	44.7	ns

It is possible that a different picture would emerge if we considered post-primary education extended over longer periods. However, the number of children is fewer for longer durations of post-primary education. For the period 1967 onward, the data indicated that children whose parents had larger farms did not fare any better as regards extending their post-primary education. Numbers are too small to explore differences which may arise after second-level education.

The pattern of results can be summarised as follows. Participation in post-primary education, by sons entering non-farming occupations was quite low for those entering the labour force up to 1936. Subsequently participation began to rise, first for those whose parents had larger farms but eventually for all farm sizes. Access to post-primary education depended on the size of the parents' farm until the introduction of free post-primary education. This inequality was reflected both in the level of non-participation and in the duration of participation in post-primary education. The evidence suggests that differences in duration of participation have been eliminated since 1967. Differences in non-participation were almost eliminated, with a somewhat lower participation rate persisting where the parents' farm did not exceed 12 hectares. This is not due to sons on small farms leaving school to work on the family farm but is probably explained by the relative inability of their parents to forgo a son's earnings as an unskilled manual worker.

Non-Farming Daughters

There are very few daughters farming, so our analysis is confined to daughters in non-farming occupations. We find, as for non-farming sons, that the size of parents' farm influences participation in post-primary education, (Table 7). The difference between small (under 12 ha) and other farms was not as great for daughters as it was for sons (contrast Tables 7 and 4). Differences between farm

Table 7: *Percentage of non-farming daughters who had some post-primary education, by period of entry to the labour force and by size of parents' farm*

<i>Period</i>	<i>Size of parent's farm</i>		<i>Difference</i>
	<i>Up to 12 ha</i>	<i>Over 12 ha</i>	
	<i>%</i>	<i>%</i>	
Up to 1936	8.0	10.3	ns
1937 to 1951	31.8	46.2	ns
1952 to 1966	60.8	77.8	*
1967 onwards	94.0	95.6	ns

sizes, which emerged before 1966, were also found between farms over 20 ha and those under 20 ha. These differences were eliminated for those entering the labour force from 1967 onward.

We also found, as shown in Table 8, that size of parents' farm influenced the duration of post-primary education before 1966. Differences between farm sizes were almost eliminated in the period 1967 onwards. When we considered durations of six or more years, for the period 1967 onwards, there is no evidence that duration of post-primary education is significantly influenced by the size of parents' farm.

Table 8: *Percentage of non-farming daughters with post-primary education who attended for over 3 years, by period of entry to the labour force and by size of parents' farm*

Period	Size of parents' farm			Difference
	Up to 12 ha	12-20 ha	20+ ha	
	%	%	%	
1937 to 1951	25.9	50.0	62.5	ns
1952 to 1966	35.6	53.3	73.7	*
1967 onwards	75.9	79.2	84.6	ns

The analysis of data of non-farming daughters confirm the findings for non-farming sons. Access to education depended on the parents' farm size before 1966. This was true in relation to both participation in and duration of post-primary education. These differences have been almost eliminated from 1967 onwards. It does appear that public policy on education has been effective in redressing socially inherited inequalities of opportunity among non-farming daughters.

IV DIFFERENCES BETWEEN FARMING AND NON-FARMING SONS

We have already noted that sons entering non-farming occupations generally have greater participation in post-primary education than those who enter farming as a career. The participation of the two occupation groups (Tables 3

and 4 above) is contrasted in Table 9 below. Non-farming sons have higher participation, although the difference did not emerge until after 1951. Since participation rates increase over time, if there was a tendency to select older sons for farming this could reduce their participation rate relative to non-farming sons. The data were examined to check for any tendency to select older sons for farming and there is no evidence of such a tendency. Any evidence of bias in selecting the farming son was towards a younger son, particularly on larger farms. The difference between the two occupation groups is larger where the parents' farm is over 12 hectares even after 1967. It will be recalled that non-farming sons from small farms had lagged behind non-farming sons from larger farms, even in the period 1967 onward (see Table 5). When the duration of post-primary education was examined no differences were found between farming and non-farming sons.

Table 9: *Percentage of sons who had some post-primary education, by period of entry to labour force, occupation type, and size of parents' farm*

Period	Parents' farm less than 12 ha			Parents' farm over 12 ha		
	Non-Farming	Farming	Difference	Non-Farming	Farming	Difference
	%	%		%	%	
1937-1951	9.7	6.1	ns	12.0	22.7	ns
1951-1966	18.2	36.6	ns	33.3	67.6	**
1967 onwards	70.0	84.0	ns	71.4	96.8	**

Since differences in participation rates persist in the period of free post-primary education (1967 onward), it reflects a choice on the part of the farm family. This choice indicates that post-primary education is considered less relevant or necessary for those entering farming, than for those entering non-farming occupations. If education is viewed as a means of influencing access to occupations, it would be less relevant to farming sons, who get farms by gift or inheritance from their parents. In contrast access to non-farm occupations is determined in competition with others. A standard part of this recruitment is exclusion on the basis of level of formal education. This could explain why non-farming sons are more likely to attend post-primary school or indeed why sons who perform well at school might be encouraged to remain in school, while a son who performs less well academically might be encouraged to take up farming.

The picture that emerges is of a lower participation rate for farming sons in post-primary education. This differential can be explained by the non-relevance of post-primary education in ensuring access to farming the family farm. In

contrast post-primary education does affect one's prospects in relation to non-farming occupations.

V DIFFERENCES BETWEEN NON-FARMING SONS AND DAUGHTERS

Higher participation in post-primary education by those not entering farming was noted already (Table 2) for both sons and daughters. Differences between non-farming sons and daughters (Tables 4 and 7 above) are contrasted in Table 10 below. Up to 1936 differences in participation in post-primary education are small, while large differences emerge for those entering the labour force in the period 1937 to 1951. Where the parents' farm is over 12 hectares the difference is reduced for 1952-1966 and eliminated for the period 1967 onward. Where the parents' farm is under 12 hectares the differences are more significant and a slight difference still persists after 1967.

Table 10: *Percentage of sons and daughters entering non-farming occupations who had some post-primary education, by period of entry to the labour force and by size of parents' farm*

Period	Parents' farm less than 12 ha			Parents' farm over 12 ha		
	Son	Daughter	Difference	Son	Daughter	Difference
Up to 1936	4.3	8.0	ns	5.9	10.3	ns
1937-51	6.1	31.8	**	22.7	46.2	*
1952-1966	36.6	60.8	**	67.6	77.8	ns
1967 onwards	84.0	94.0	ns	96.8	95.6	ns

How can the higher participation by females, notable in the 1937-66 periods, and the subsequent equalisation be explained? A possible explanation lies in the differences in occupation structures for males and females and related occupational training practices. The cultural norm has been that males are relatively concentrated in manual and females in non-manual occupations. Training for manual occupations has traditionally been by apprenticeship. This meant that those training for skilled manual work would leave formal schooling earlier and continue training at work. Since males are relatively concentrated in manual work their occupational opportunities did not require so much formal education. In contrast, females are relatively concentrated in non-manual occupations which have higher requirements for post-primary education. Also, until recently, females' social status was almost exclusively tied to their

husbands' occupation. The evidence accords with that found by McNabb (1964) who suggested farm females are better educated in order to enhance their occupational and marriage prospects.

Since sex typing of occupations persists it cannot explain the equalisation in participation since 1967, particularly where the parents' farm was over 20 hectares. We found, however, that while the differences in participation declined, differences in duration of post-primary education increased (see Table 11). These differences are most striking for the period 1967 onward, when free post-primary education is in operation. It is concluded then that parents choose more post-primary education for females. This can be understood if post-primary education is seen as instrumental in affecting access to occupations. The sex typing of occupations would justify allocating educational opportunities so as to give more formal education to females.

Generally it can be said that families are allocating post-primary education among their children so as to compensate for the differential difficulties in gaining access to occupations. If this postulated explanation is true then it should be reflected in the occupations attained by sons and daughters.

VI OCCUPATIONAL STRUCTURE FOR FARM CHILDREN

In the preceding analysis people were classified as farming or non-farming on the basis of their occupation at the time of interview. When examining occupational structure we have chosen to consider the first, rather than the final occupation in order to capture the occupations of females. The majority of females become homeworkers, a category not included as part of the occupation structure. Focusing on final occupation would exclude these women from consideration and also would not relate to the same point in people's work careers.

The data in Table 12 show clearly the way in which gender differences in educational participation are reflected in the occupational structure. In the pre-1967 period, more than half the males became production workers whereas women were concentrated in the professional and technical, commercial and clerical fields, for which secondary education would usually be a requirement. In the post-1967 period, while the male occupational distribution remained virtually the same, there were some important shifts in the female structure. Since 1967, the numbers of women who remained at home on the farm or in service (mainly domestic service occupations) have dropped dramatically. More than half the women in this period found jobs in either the professional or clerical areas (58%). Those in the professional categories were in the main teachers, nurses or nuns. Eighty-eight per cent of those recorded in this category in the

Table 11: *Percentage of non-farming sons and daughters with more than 3 years post primary education, by period of entry to the labour force and by size of parents' farm*

<i>Period</i>	<i>Parents' farm less than 12 ha</i>			<i>Parents' farm 12 to 20 ha</i>			<i>Parents farm over 20 ha</i>		
	<i>Sons</i>	<i>Daughters</i>	<i>Difference</i>	<i>Sons</i>	<i>Daughters</i>	<i>Difference</i>	<i>Sons</i>	<i>Daughters</i>	<i>Difference</i>
	%	%		%	%		%	%	
1952-1966	23.1	35.6	ns	32.0	53.3	ns	56.0	73.7	ns
1967 onward	47.6	75.9	***	48.1	79.2	**	44.7	84.6	***

Table 12: *Percentage of non-farming offspring distributed according to their first occupation category in the pre and post 1967 period*

<i>Occupational Category</i>	<i>Pre-1967</i>		<i>Post-1967</i>	
	<i>Males</i>	<i>Females</i>	<i>Males</i>	<i>Females</i>
	<i>%</i>	<i>%</i>	<i>%</i>	<i>%</i>
1. Agricultural workers (including relatives assisting on farms)	6.3	10.0	6.6	0.8
2. Production workers	53.7	2.7	54.8	7.3
3. Labourers and unskilled	3.4	3.6	3.6	5.6
4. Transport and Communications	7.5	1.8	7.2	5.6
5. Services	4.5	23.6	3.0	11.3
6. Clerical	1.5	10.9	5.4	30.6
7. Commerce and Finance	10.1	13.6	7.8	7.3
8. Professional and Technical	7.1	24.5	9.6	27.4
9. Others	6.0	9.1	1.8	4.0
Total	100.0	100.0	100.0	100.0
1, 2 & 3 combined	63.4	16.3	65.0	13.7
6, 7 & 8 combined	18.7	49.3	22.8	65.3
N	(268)	(110)	(116)	(124)

1971 Census of Population were in these professions. The predominance of women in white collar occupations for which second level education was a prerequisite, conforms to our explanation of the gender difference in educational participation. In contrast, about 65 per cent of males are in occupations which do not require a similar standard of education.

VII DISCUSSION

We have focused on the participation of farm children in second-level education, analysing some results of a study carried out in the West of Ireland. We examined the way in which farm parents allocated education between their children, viewing education as a means of influencing access to occupations.

Hence we distinguished between offspring according to whether their occupation was farming or non-farming.

There has been a dramatic increase in participation over the past fifty years, particularly in the period since 1967, when free post-primary education was introduced. Since 1967 participation rates of non-farming sons and daughters was more than 90 per cent, while farming sons had a lower participation rate of 70 per cent. Farming sons in all periods had lower levels of participation than non-farming sons or daughters.

In the periods before 1967 non-farming sons had lower participation rates than non-farming daughters. While the participation rates are equalised since 1967 we found that daughters have more years of post-primary education. Non-farming daughters get more second-level education than non-farming sons over all periods.

Examination of participation rates across farm sizes showed that for each category of offspring, participation increased with farm size up to 1967. Lower participation rates persisted for non-farming sons on smaller farms even after 1967. Clearly, access to post-primary education depended on the size of the parents' farm until the introduction of free post-primary education in 1967. Even without free second-level education the trend of increasing participation would presumably have continued, in line with general economic growth and the increasing significance of education as an entrance requirement to a more complex occupational structure. Nevertheless, the effect of free second-level education on equalisation between farm size illustrates how a specific State intervention can alter established patterns.

Our interpretation of these data is that parents perceive post-primary education as a means of securing positions in the occupation structure. The inheriting child (almost invariably male) is considered to have less claim on education since his place in the occupational structure is secured. This may involve parents selecting sons who perform less well academically to inherit the farm. Such intergenerational transfer to equalise opportunities between advantaged and disadvantaged siblings, is a general phenomenon (Becker and Tomes, 1976; Griliches, 1979). As Tomes (1979, p. 44) found "if greater child endowments ... increase the rate of return of human capital investment [i.e., education] ... transfers in the form of human capital are substituted for material wealth".

Participation of non-inheriting children in education reflects appraisal of the occupational options for males and females and the ability of parents to forgo the income generated by farm children. Male children are less likely to remain in education. This can be explained by the existence, in the occupational structure, of more opportunities for males which require less formal educational credentials. Occupational positions for daughters require more educational

credentials so they have higher participation in and duration of schooling than males. The inability of families on small farms to forgo potential earnings results in their sons having a still lower participation in second-level education. While differences in farm size have contributed to inequality of opportunity between families, farm transfer is used to equalise opportunities within the family.

While participation in education has been increasing, the differences between farming and non-farming sons have persisted. If the relatively low level of farmer education is to be raised it will need special measures to foster such an outcome. Two measures were introduced this year (in the form of higher, +25%, rates of grant aid and installation aid for farmers under 35 years of age, see Department of Agriculture, 1986), conditional on the farmer being "suitably trained and qualified". The minimum educational qualifications for farmers born after January 1, 1968 is the ACOT Certificate in Farming. Those born before that date will be required to have "a minimum of three years practical farming experience supplemented by satisfactory attendance at the final year of the ACOT Certificate programme or an equivalent training course". Since second-level education is more critical to the occupational opportunities of non-farming than of farming sons, we found farming sons have less formal education. Also it is likely that sons who perform well at school are encouraged to remain in school, while a son who performs less well academically will be encouraged to take up farming. It is important therefore that training programmes be geared to those with limited post-primary education and oriented towards vocational (i.e., applied, experiential learning). The Certificate programme is definitely an applied learning programme. However, it is oriented very much towards people who have completed second-level education. "It is intended that in future, possession of the Leaving Certificate or an equivalent qualification will be a requirement for entry to the programme" (ACOT, 1986). However, farming sons tend to spend a relatively short period in second-level education. Hence such a requirement would seem ill advised, unless appropriate vocational pre-Leaving Certificate training is made available as a preparatory programme.

The increased attendance at second-level school by farming sons could provide a prime opportunity to advance their agricultural education, if agricultural science was offered as a school subject. It ought to be available in the first years of post-primary schooling, since farming sons tend to spend a relatively short period in post-primary education. This could lay the foundation for training after leaving the post-primary school.

While there are arguments in favour of education and training being concentrated on the young, it is important to keep in mind that the farm labour force tends to be relatively old. According to the 1981 Census only 25 per cent of farm labour, which is mostly (90%) family labour, was under 35 years. The corresponding percentage for the total labour force was 54 per cent. In the case

of farmers themselves only 15 per cent of farmers were under 35 years. It should be noted that farmers are also self-employed unsupervised workers and hence lack any guidance while at work. Furthermore, educational differences in favour of the non-farming sons are likely to persist in the future as a result of parents' efforts to equalise opportunities among children. Hence there is need for vocational adult education programmes for farmers, designed in accordance with their relatively limited experience of formal education.

Farm women are likely to have more formal education than their spouses. Yet their actual or potential role in agricultural development has never really been formally recognised or provided for in education and training programmes, except in relation to poultry production and home management. This, like the occupational structure, reflects the sex typing of roles. As Mahon (1968, p. 69) states "the relationship between gender and education must be understood in the context of the relationship between gender and society and education and society". An awareness that rigid sex linked perceptions of adult roles can limit opportunities to benefit from the education and management potential of females, may hasten the relaxation of such rigidities.

VIII CONCLUSIONS

Participation of farm children in post-primary education reflects the ability of their parents to afford such education. Access to post-primary education depended on the size of the parents' farm, until the introduction of free post-primary education in 1967. The equalisation since 1967 showed how a specific State intervention altered the established patterns and lessened inequality of opportunity.

Participation of non-farming children in education reflected the appraisal, by parents, of the occupational options for males and females, with daughters getting more formal education. The sons who took up farming received least post-primary education, since access to farming could be assured by gift transfer of the family farm. Thus, while differences in farm size have contributed to inequality of opportunity between families, farm transfer and differential schooling are used to equalise opportunities within the family. Attempts at equalisation within the family, and hence differences in formal education, are likely to continue.

It is appropriate that training programmes for farmers take the relatively low levels of post-primary education into account. Because of their shorter period in second-level schooling, agricultural science courses might best be provided in the early post-primary years. Since many young farmers will not have attained the Leaving Certificate, appropriate vocational pre-Leaving Certificate

training is important. As farmers are elderly there is a continuing need for vocational adult education programmes, designed in accordance with their relatively limited experience of formal education. Women are likely to have more formal education than their farmer husbands. Hence it is pertinent to develop their potential role in improving agricultural education and farm management.

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APPENDIX

This appendix gives the sample numbers for tables in the text. Appendix Table A3, for example, corresponds with Table 3 in the text.

Table A3: *Number of farming sons who had some post-primary education, by period of entry to the labour force and by size of parents' farm*

Period	Parents' farm size	
	Up to 12 ha (No)	Over 12 ha (No)
Up to 1936	20	12
1937 to 1951	31	25
1952 to 1966	22	27
1967 onwards	10	14

Table A4: *Number of non-farming sons who had some post-primary education, by period of entry to the labour force and for 2 size category of parents' farm*

Period	Parents' farm size	
	Up to 12 ha (No)	Over 12 ha (No)
Up to 1936	23	17
1937 to 1951	49	44
1952 to 1966	71	74
1967 onwards	75	93

Table A5: *Number of non-farming sons who had any post-primary education, by period of entry to the labour force and for 3 size category of parents' farm*

Period	Parents' farm size		
	Up to 12-ha (No)	12-20 ha (No)	20+ ha (No)
1952 to 1966	71	43	31
1967 onwards	75	53	40

Table A6: *Number of non-farming sons with post-primary education who attended for more than 3 years, by period of entry to the labour force and by size of parents' farm*

Period	Parents' farm size		
	Up to 12 ha (No)	12-20 ha (No)	20+ ha (No)
1952 to 1966	26	25	25
1967 onwards	63	52	38

Table A7: *Number of non-farming daughters who had some post-primary education, by period of entry to the labour force and by size of parents' farm*

Period	Parents' farm size	
	Up to 12 ha (No)	Over 12 ha (No)
Up to 1936	25	29
1937 to 1951	85	52
1952 to 1966	74	63
1967 onwards	84	91

Table A8: *Number of non-farming daughters with post-primary education who attended for over 3 years, by period of entry to the labour force and by size of parents' farm*

Period	Parents' farm size		
	Up to 12 ha (No)	12-20 ha (No)	20+ ha (No)
1937 to 1951	85	39	13
1952 to 1966	74	41	22
1967 onwards	84	49	42

Table A9: *Number of sons who had some post-primary education, by period of entry to the labour force, by occupation type and by size of parents' farm*

Period	Parents' farm less than 12 ha		Parents' farm over 12 ha	
	Son's occupation		Son's occupation	
	Farming (No)	Non-farming (No)	Farming (No)	Non-farming (No)
1937 to 1951	25	44	25	44
1951 to 1966	22	71	27	74
1967 onward	10	75	14	93

Table A10: *Number of sons and daughters entering non-farming occupations who had some post-primary education, by period of entry to the labour force and by size of parents' farm*

Period	Parents' farm less than 12 ha		Parents' farm over 12 ha	
	Son (No)	Daughter (No)	Son (No)	Daughter (No)
	Up to 1936	23	25	17
1937 to 1951	49	85	44	52
1952 to 1966	71	74	74	63
1967 onward	75	84	93	91

Table A11: *Number of sons and daughters entering non-farm occupations with more than 3 years post-primary education, by period of entry to the labour force and by size of parents' farm*

Period	Parents' farm less than 12 ha		Parents' farm 12-20 ha		Parents' farm over 20 ha	
	Sons (No)	Daughters (No)	Sons (No)	Daughters (No)	Sons (No)	Daughters (No)
	1952 to 1966	26	45	25	30	25
1967 onward	63	79	52	48	38	39