

Preprint

Gender Composition and Household Labour Strategies in Pre-Famine Ireland

Jane Gray

Department of Sociology and National Institute for Regional and Spatial Analysis

National University of Ireland, Maynooth

County Kildare, Ireland

Tel: +353-1-708 3596

Email: jane.gray@nuim.ie

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Abstract

This paper examines the relationship between gender composition and rural household strategies in Cavan, a county in north-central Ireland, during the first half of the 19th century. I show that the ratio of adult females to males was highest in small farm households that depended for their survival on intensively deployed family labour in agriculture, flax-cultivation and spinning. By contrast, households without land or with micro-holdings relied on the income from men's employment as agricultural labourers, supplemented by women's work as spinners. More substantial landholders employed men as agricultural labourers. In both of the latter categories household labour strategies centred on men's activities, with women's work representing an important supplement, whereas in the small-farm category household labour strategies centred on a strategic balance between men's and women's labour input. Amongst households engaged in linen weaving the ratio of women to men was lower across all landholding categories. Differences in gender composition resulted from a complex interplay amongst household labour and inheritance strategies in a changing socio-economic environment.

Introduction

Research on European proto-industrialization has highlighted the significance of women's work and the gender division of labour for patterns of economic growth and development before and during the transition to factory industry. In his classic statement on the proto-industrial family economy, Medick (1976, p. 311) wrote that women's labour often provided the "vital margin" of household subsistence.

Subsequently, Gullickson (1986) argued that differences in the gender composition of the rural industrial labour force within households accounted for variations in the demo-economic consequences of proto-industrialization. According to Gray (1997, 2003, 2005), gendered differences in the interaction between household and market help to explain different and uneven patterns of development in proto-industrial regions. Goldstone (1996) suggested that differences in the extent to which women were available for work outside the household explain why, in contrast to Europe, China failed to develop a factory-based system of textile production until the 20th century. In a comparison of women's work in three European textile manufacturing regions Maynes (2003, p. 63) concluded that, "the historically particular nature and degree of labor market participation of Europe's young women had important implications both for the process of economic development in Europe and for the history of European age and gender relations."

The scholarship on proto-industrialization and gender has highlighted the extent to which women's labour was simultaneously *central* to household prosperity and regional economic growth, and *marginal* insofar as women were generally confined to the most labour-intensive and poorly remunerated manufacturing tasks. Scholars have developed a number of explanations for the existence of gender divisions of labour in pre-industrial and early industrial households. These have

centred on the compatibility of different kinds of tasks with women's primary responsibility for childcare (Tilly and Scott 1978; Pfister 1995), on the exclusion of women from formal social networks governed by guild regulations or hierarchies of skill (Quataert 1985; Rose 1992; Ogilvie 2004), and on women's household 'bargaining positions' in changing local and global contexts (Gray 2005). But we know relatively little about how individual rural industrial households deployed women's labour in order to meet their requirements, given the constraints and opportunities presented by gender divisions of labour. Did the significance and availability of women's labour vary across different kinds of households, and if so, how were these variations linked to household strategies?

In a classic article on the Irish linen industry, Collins (1982, p. 134) argued that, "the expanding prosperity of domestic production depended...on the paradoxical situation of a flexible household membership within the inflexibility of the parameters of production." Those inflexible parameters included family life cycle stage and the gender division of labour between spinning (women's work) and weaving (men's work), "particularly as the ratio of spinning to weaving labour was not on a one to one basis" (Collins 1982, p. 133). In order to meet varying demands for men's and women's labour, linen manufacturing households employed itinerant spinners, relatives outside the nuclear family, journeyman weavers and servants, in addition to their adolescent sons and daughters who were able to remain at home longer than would have been possible in the absence of rural industry.

This article expands on Collins' work through a detailed examination of the surviving 1821 census records from Cavan, a county in north-central Ireland that formed part of the extended flax spinning and linen-weaving region centred on Belfast in the northeast. My analysis shows that households' capacity to exercise flexibility

in their labour supply, and the proportions of male and female labour available to them, varied according to the size of their landholdings. On average, smallholders who were not engaged in weaving had higher ratios of female to male workers than either landless households or more substantial farm households. I argue that, while this was partly because smallholders did not command the resources to add or retain male labour, it also represented a distinct household economic strategy centring on labour intensive agricultural production and spinning. The analysis further shows that households engaged in weaving had lower ratios of female to male workers, irrespective of landholding size. Almost no weaving households could have produced sufficient yarn for their needs from within their own household resources. Women's labour is more likely to have provided the vital margin of subsistence in small farm households than in weaving households. I suggest that this has important implications for how we interpret evidence on the demo-economic consequences of proto-industrialization in the Irish case.

Like Collins, I assume that both gender composition and the deployment of women's labour were subject to strategic choices and adaptations at the level of individual households. A recent special edition of this journal highlighted the fruitfulness, but also the limitations of the 'family strategies' concept. By focusing on strategies, "the agency of historical actors might be exaggerated, and the extent to which we can reconstruct these strategies from the resulting behavior of those actors will certainly be exaggerated" (Engelen, Kok and Paping 2004, p. 248). In particular, it is not meaningful to regard an observed behaviour as strategic if there were no alternative options. In this article I try to avoid the more serious methodological hazards associated with the household strategies approach by supplementing my data with evidence from a range of sources, and by linking the findings to trends across

time. However, I would also like to suggest that we can learn a good deal about household dynamics and their relationship to long-term patterns of social change by examining behaviour *as though* it were subject to choice, even if it did not always appear so to the actors themselves.

The gender division of labour is often treated as a phenomenon governed more by normative than strategic economic considerations (see e.g. Pfister 1995, p. 139). In Ireland, so long as linen manufacturing was carried on in 'independent' households, men never resorted to the comparatively labour intensive and poorly remunerated task of spinning, and women rarely engaged in weaving.¹ This gender division of labour created imbalances in the labour supply within households that in turn created a regional division of labour between spinning and weaving districts, and structured the overall development of the industry in Ireland (Collins 1982, Gray 1993, 1997, 2003). It broke down once the relations of production were transformed by the application of capital to the mechanization of spinning. Both women and men engaged in weaving mill-spun yarn put out by manufacturers (Collins 1997).

It is important to remember that proto-industrial households could have adopted a different approach to the allocation of tasks associated with linen manufacturing. In principle, they could have allocated labour according to overall household requirements rather than by sex. Instead, they responded to the opportunities presented by the growing demand for linen goods within the parameters of the 'traditional' division of labour that made spinning women's work. However, that women took up weaving after the mechanization of spinning shows that this 'algorithm of everyday life' (Van der Linden, quoted in Engelen, Kok and Paping 2004, p. 249) was not impervious to change when economic circumstances made it unsustainable. Thus the concept of family adaptive strategies provides a useful

framework for understanding variations in the gender composition of rural households. Within the parameters of a division of labour that confined women to labour-intensive, 'drudgerous' tasks, the significance of women's work to the household economy varied according to landholding size.

County Cavan in 1821: Data and Study Area

The first comprehensive census of Irish population was carried out in 1821. Unfortunately most 19th century Irish census enumerators' schedules were destroyed by fire in the early 20th century. However manuscript copies of the original 1821 schedules survive for fifteen parishes in County Cavan, and are held in the National Archives of Ireland (CEN 1821/1-15).² This represents the largest cluster of surviving schedules from 1821. I collected two sets of data from these returns. The first consists of the *population* of households where at least one weaver was resident. The second consists of a *systematic sample with a random start* of every fifth household where no weaver was resident. In the analysis that follows, data from the population of weaving households are generally treated separately from the sample of non-weaving households. However, where statistical inferences are made to the entire population of the study area (weaving and non-weaving households), the weaving data are weighted by a multiplier of 0.2.

<Figures 1 and 2 about here>

Figures 1 and 2 show the topography of County Cavan and the location of parishes within the study area. The county was incorporated to Ireland's growing domestic linen industry in three waves. During the first half of the 18th century the growth of population in the linen districts around Belfast led to increased demand for food, milch cattle and yarn, which in turn stimulated improved agricultural production

and an increase in spinning for the market throughout south Ulster (Crawford 1975, p.245). Weaving was at first confined to Protestant settlers along the northern border of County Cavan, but after 1745 it spread throughout the religious and social hierarchy in response both to widespread crop failure and cattle losses, and to increased demand for Irish linens in Britain and the American colonies. Irish linens were exposed for sale by weavers and small manufacturers through a network of 'brown' linen markets, so-called because the linens were unbleached. There they were purchased by drapers who sold them on to the bleacher-merchants that dominated the Irish linen trade by the second half of the 18th century. In Cavan, the most important market for linens was at Cootehill, in the east of the county. There was a secondary market at Killashandra, in the west, with two smaller markets (Arvagh and Ballynagh) to its south. The 1780s and 90s saw unprecedented increases in Irish linen exports. Sales at Cavan's linen markets more than doubled in this period (Crawford 1994, p. 78), which also saw the beginning of a new wave of agricultural commercialisation in response to high wartime prices for corn (O'Neill 1984, pp. 72-78). Linen sales in Cavan began to decline in the early decades of the 19th century, although the number of weavers attending the markets does not seem to have changed (see Crawford 1988, p. 47). There is some evidence that the volume of output increased again in the 1830s and 1840s (Collins 1982, p. 142).

Cavan's markets accounted for about 5% of the total value of linens sold at brown linen markets in Ireland in 1821. Unfortunately, the area covered by the surviving census schedules does not include either of the main linen market towns, but it does include the minor market of Ballynagh, and eight of the fifteen parishes lie within twenty kilometres of either Cootehill or Killashandra. My sample implies a proportion of 8.6 percent of households engaged in weaving within the study area.

The proportion is 8.4 percent if the population of weaving households in the census manuscripts is calculated against the published totals from the early 19th century. Just over 50 percent of all households had at least one spinner resident, but this estimate is unreliable as the proportion of spinners in the population is dependent on the proportion of women for whom an occupation was recorded and this, in turn, varied considerably across parishes within the study area (see Gray 1999, 2005). Spinning was an everyday part of normal household duties for all women but I will argue, the importance of spinning to the family economy varied across different kinds of households. Unfortunately we do not have data on yarn sales in Cavan comparable to the data on linen sales, but observations by contemporaries indicate that the county was a major supplier of yarn from the beginning of the 18th century through the early decades of the 19th century.

Using econometric models, McGregor (1992) showed that domestic industry was associated with a reduction of inequality in the distribution of landholdings in Ireland in the 1840s, without having any discernible effect on median landholding size. This is partly consistent with the model of the proto-industrial family economy developed by Medick (1981a, pp. 48-49). The availability of income from rural industry lifted the restrictions on household formation inherent in the peasant economy, permitting families to survive on smaller landholdings. At the same time the desire to ensure an adequate basis for subsistence meant that rural industrial producers were willing to pay exorbitant rents just to maintain a grip on the land. As a result, proto-industrial regions were often characterized by the rapid expansion of smallholders (Medick 1981b, p. 83). In Ireland cottiers in the vicinity of major linen markets were able to outbid tenant farmers for leases, leading to an overall reduction in landholding size (Crawford 1975, p. 255).³ Elsewhere, however, farmers retained

enough land to ensure that they were not completely dependent on the linen industry for their survival (Cohen 1990).

This spatial pattern is evident in the Cavan study area where the distance of parishes from the nearest major linen market was positively associated both with mean landholding size (Spearman's rho = .633, $p < .01$) and with its standard deviation (Spearman's rho = .492, $p < .03$). Distance from the nearest linen market was also positively associated with the percentage of landless households (Spearman's rho = .517, $p < .05$). In other words, proximity to either Cootehill or Killashandra led to a landholding pattern dominated by smallholdings, relatively little inequality in landholding size, and fewer landless households. Income from spinning must have played a significant part in bringing about this smallholding pattern, since the proportion of households engaged in weaving was relatively small in each parish, although it was indeed negatively correlated with distance from the nearest major linen market (Spearman's rho = -.604, $p < .01$). Within the study area as a whole, nearly 40 percent of all households did not report holding any land, or held fragments of less than 1 acre. Amongst those who did hold land, the median landholding size was 7 acres. Farms of up to 20 acres accounted for 95% of all those who did hold land. The remaining 5% of households held farms ranging from 20 to 150 acres. There is reason to believe that the acres reported were either Cunningham, or Irish acres.⁴ Both measures were larger than English statute acres (Cunningham, 1.29:1 and Irish, 1.62:1).

Landholding size and gender composition

In order to compare the gender composition of different kinds of households, I categorized landholdings of between 3 and 7 acres (at the median or below) as

smallholdings. Just two percent of all households reported holdings of 1 or 2 acres, and I included these in the same category as households without any recorded acres. Households holding 8-19 acres were categorized as more substantial, mid-sized holdings. The remaining 5 percent of households holding 20 acres or more were not included in the analysis because the variation in their size was so great. In calculating the ratio of adult females to males by landholding category, I confined the analysis to households where a spouse of the household head was present. The proportion of landless households headed by a woman with no spouse present (18 percent) was nearly twice that in any of the other landholding categories. The proportion of households headed by a man without a spouse present varied less by landholding size (14 percent overall).

<Figure 3, Table 1 about here>

Figure 3 shows the median, inter-quartile range and outliers for the ratio of adult females (aged 15 years or more) to adult males amongst non-artisan households headed by farmers or labourers in each of the landholding categories. While the median was 1:1 in all categories, amongst smallholders the distribution was skewed upwards. As a consequence the mean ratio of adult females to males, as shown in Table 1, was significantly higher than amongst landless or mid-sized landholding households.

<Table 2, about here>

Table 2 shows the distribution of adult females and males by relationship to the head of household in each landholding category. The most notable difference between landless and smallholding households lay in the percentage with a female servant present – 13% in the latter compared to about 3% in the former. The greater proportion of female “inmates” in landless households did compensate to some

extent: overall about 16% of landless households had adult females outside the nuclear family residing with them, compared to 25% of smallholding households. The latter were more likely to have adult daughters living with them, but they were also somewhat more likely to have adult sons resident. Mid-sized landholding households differed strikingly from smallholders both in the percentage with male servants (23% compared to about 5%), and in the percentage with adult sons living at home (40% compared to 26%). In summary, smallholders had a higher average ratio of adult females to males mainly because they were more likely to hire female servants than landless householders, and less likely to hire male servants or to have adult sons living with them than mid-sized landholders.

<Figure 4 about here>

The presence of both servants and adult children in the household are likely to have been affected by the family lifecycle. Wives in smallholder households were a little younger on average compared to those in landless and mid-sized households (37.5 compared to 38.2 and 39.7 years), and the difference between smallholder and mid-sized household wives' mean ages was statistically significant ($t=-2.736$, $p<.006$). Figure 4 indicates that, compared to landless households, smallholding households had, on average, a higher mean ratio of adult women to men than landless households throughout the family life cycle, once children were present (Stages 2-4). Compared to mid-sized households, the ratio was higher in smallholder households where children had reached the age of 15 years (Stages 3-4). However, as Table 1 shows, the difference between smallholders and landless householders was statistically significant only amongst those households where all children were less than 15 years old, and between smallholders and mid-sized landholders only amongst those households where all children were more than 15 years old. Thus, in terms of

their gender ratio, smallholders differed significantly from landless householders at the beginning of the family life cycle, and from middling landholders at the end of the family life cycle.

<Figures 5, 6 and 7 about here>

Figures 5, 6 and 7 help to clarify further the gendered makeup of households in each landholding category across the family lifecycle. They show the mean number of children less than 15 years, sons and daughters aged 15 years or more, and males and females outside the nuclear family by wife's age category. Of course treating cross-sectional data as evidence of a pattern across the lifecycle in this way is fraught with danger: younger families might not behave the same way as contemporary older families in the future, and it is not possible to control for the effects of migration. In addition, the data are characterized by considerable age-heaping, which increases at the older ages, so that the category 45-49 years in particular seems too small. Despite these shortcomings, the charts show that – as expected - in all three categories the mean number of non-family members declined as the number of adult children in the household increased. There appear to have been fewer children resident in landless households throughout the family lifecycle: the mean number of children under 15 years peaked below that in either smallholding or medium-holding households.⁵ The mean number of adult daughters or adult sons never reached 1, suggesting that most children were obliged to leave the household at a relatively early age. Amongst smallholding households the number of adult daughters living at home exceeded that of adult sons towards the end of the family lifecycle, whereas amongst medium-holding households the opposite was true. This suggests that, compared to mid-sized landholders, smallholders were better able to absorb and retain the labour of adult daughters than that of adult sons.

<Table 3 about here>

Before proceeding to a discussion of the different contributions of men's and women's labour in the household economies of each of the three categories, it will be useful to contrast the gender composition of households engaged in weaving with those that were not. The mean ratio of adult females to males was 1.02:1 in the population of weaving households compared to 1.20:1 (95% C.I. 1.17-1.23) in the sample of non-artisan households. Amongst weaving households with landholdings above the median of seven acres, the mean ratio of women to men was below 1:1.

Table 3 shows the composition of adult females and males by landholding category in weaving households. Compared to non-artisan households, a greater proportion of households in each landholding category had adult sons living at home. It should be noted, however, that amongst weaving households with mid-sized landholdings, the mean age of wives (44.9) was five years older than that of their counterparts in non-artisan households (39.7, 95% C.I. 38.5-41.0). The most striking difference is in the greater number of weaving households with male 'inmates.'⁶ This is because 16 percent of weavers lived as journeymen in households where they were not related to the household head. Across all household categories, the proportion of households with female 'inmates' did not exceed 10 percent. This suggests that, on the whole, rural industrial households in the Cavan study area relied mainly on servants or relatives for additional female labour outside the conjugal family, whether or not they were engaged in weaving. The significance of this observation will be discussed in more detail below.

Explaining differences in the gender composition of households

What explains the variations in gender composition in different kinds of households?

At least some of the difference between smallholding households and those below and above them on the landholding scale may be attributed to differences in their ability to hire servants. Given that across all household categories the proportion employing female servants exceeded that employing male servants, it is likely that households sought to hire additional female labour in the first instance, and then added male labour if they could afford it.⁷ Female servants were especially helpful at the beginning of the family life cycle when wives' labour capacity was reduced by pregnancy and the care of young children. Smallholders were more likely to afford female servants than landless households, but less likely to afford male servants than households with mid-sized holdings. In the later stages of the family life cycle, smallholders tended to have more adult children of both sexes living at home than landless households, but to have fewer adult *sons* living at home than households with medium holdings. This pattern must be explained with reference to the opportunities for marriage available to young men and women from different kinds of households, to inheritance strategies, and to differences in households' ability to absorb male and female labour.

For many years the work of K.H. Connell (1950) dominated our understanding of the peasant economy in Ireland before the Great Famine of the mid-19th century. Connell argued that because of land availability – either through partible inheritance or the reclamation of waste – and the possibility of relying on potato cultivation for survival, Irish people were not subject to the constraints on marriage inherent in the European peasant system. Moreover, because in most cases they had no prospect of improving their material well-being under the prevailing system of landlord tenant

relations – increased productivity simply led to increased rents – the Irish had no incentive to postpone marriage.⁸ Thus Connell represented early marriage as an ‘inferior good’ (O’Grada 1994, p. 7) leading to the extraordinary growth in Irish population that occurred from the middle of the 18th century.

Research carried out in the 1980s and 1990s showed that at least some aspects of Connell’s argument are clearly wrong. Most importantly, there is little evidence to support the thesis that the Irish married at an unusually young age (Guinnane 1997, p. 82). There is also some evidence of an increase in average age at marriage in the 1820s and 1830s (O’Grada 1994, pp. 69-74; O’Neill 1984, p. 181), suggesting that Irish nuptiality did in fact respond to changing economic circumstances. Some research supported the hypothesis of a positive relationship between participation in rural industry and propensity to marry but the findings are ambivalent from the perspective of proto-industrialization theory (see the discussions in Kriedte, Medick and Schlumbohm 1997 and Gray 2005). In an analysis of aggregate, county-level data from the 1841 census, Almquist (1979, p. 711) found that spinning was significantly positively associated with high young female nuptiality. However, he found no association between weaving and young female nuptiality, although weaving was associated with young *male* nuptiality. Moreover, spinning and weaving were not significantly positively correlated, reflecting the extent to which large parts of rural Ireland were incorporated to the linen industry only through spinning. In a more sophisticated analysis of 1841 census data at the smaller territorial level of barony, Mokyr (1985, p. 55) found that cottage industry affected male propensity to marry, but not that of females. However, Mokyr measured ‘cottage industry’ as the proportion of rural men and women employed in ‘occupations ministering to

clothing,' thus obscuring the different effects of spinning and weaving suggested by Almqvist's analysis.

Unfortunately, the 1821 census did not collect direct information about marriage or marital status (other than relationship to the head of household). However, O'Neill's (1984, pp. 177-186) analysis of data from the surviving *1841* manuscripts for the parish of Killashandra (see Map 2) revealed an average age at marriage of between 25 and 26 years for men, and about 22 years for women. These figures are low compared to estimates for Ireland as whole, and Guinnane (1997, p. 82) suggested this might be explained by the availability of earnings from textile production in Killashandra. Unfortunately, O'Neill did not make separate calculations of age at marriage for weavers or spinners. He did, however, calculate that on average labourers' wives married somewhat later - at 22.3 years - than farmers' wives - 21.7 years. The opposite was true for their husbands: on average labourers were 24.5 years old at first marriage, while farmers were 26 years old. In O'Neill's data the youngest mean ages at first marriage were found amongst those farmers and their wives that he defined as 'middling' - holding from 13-25 Irish acres.⁹ Husbands in this category married at about 25.6 years compared to 27.1 years amongst smaller farmers. Their wives' ages averaged 21.6 years compared to 23.8 years amongst smaller landholders. While direct comparison cannot be made with the 1821 data, O'Neill's findings do suggest that the opportunity for marriage declined as landholding size decreased. They are consistent with the image of a landholding system characterized by widespread subdivision that began to be resisted as the minimum viable holding size approached. According to the mid-century parliamentary enquiry known as the Devon Commission, eight acres was the minimum holding size required to "support a family in comfort" (quoted in McGregor

1992, p. 480), and this corresponds fairly well to the modal distribution of farm size in County Cavan.¹⁰

For farmers who wished to avoid subdividing their land, training their sons to be weavers offered an alternative way of providing them with an inheritance. In 1821 it was observed of Raphoe, in County Donegal, that twenty years previously “It was usual...for the farming heads of families to put their younger sons into this employment [weaving], many of whom were enabled by proper economy and application in a few years to purchase farms, but this practice has been long discontinued” (quoted in Crawford 1994, p. 51). It is plausible that a similar strategy persisted in County Cavan, given its closer proximity to Ulster’s core weaving zone. Amongst households in the study area with resident adult sons, 12 percent had at least one son engaged in weaving on medium sized holdings, compared to 6 percent of landless households and 8 percent of households on smallholdings. Heads of household who were weavers were a little younger on average than either farmers or labourers.¹¹

Thus the medium-holding households in the Cavan study area may have had more adult sons resident due to a strategy of delaying or avoiding inheritance. However, they also had a higher demand for male labour, as indicated by the greater proportion of such households with male servants present. This can be attributed to the system of spade husbandry that characterized agriculture throughout most of Ireland before the Famine. The most commonly cultivated crops in Cavan were oats, followed by potatoes and flax. According to O’Neill (1984, p. 86), the prevailing system of rotation in the early 19th century was two crops of potatoes, followed by flax or oats, then three crops of oats followed by grass or potatoes. The continuous cropping regime, where the land was never put to grass, was characteristic of small

farms without livestock. Because agriculture was carried out by spade husbandry, tillage in pre-Famine Ireland created diseconomies of scale. According to McGregor (1992, p. 480), “The optimum size of holding fell with increases in tillage intensity...As farm size fell, production became more labor-intensive. Thus small farms tended to substitute labor for capital in production and tillage for livestock products in outputs.” On farms without livestock, considerable labour was expended in the collection of manure – from the roads, wasteland and seashore. Data from the 1841 census show that the average number of cattle and pigs per farm increased with farm size. However, according to calculations by O’Neill (1984, Table 2.8, p. 91), the *proportion* of land given over to livestock followed a curvilinear pattern, with ‘middling’ farms having lower mean numbers of animals per acre than either the smallest or largest farms. This implies both that the amount of land devoted to cereal tillage was greater in the middle ranges, and that the demand for male labour was highest on these farms.

Even allowing for the fact that medium-sized farms tended to have larger numbers of adult sons and male servants resident, they could not have met their male labour requirements from within their own households. According to Sir Charles Coote, it took “but twelve men to dig an acre in a day’s work” (quoted in O’Neill 1984, p. 87). Farmers in County Cavan had two principal options for adding to their male labour supply at times of heightened demand. Under the cottier system they could provide landless families with a cottage and small plot for potato cultivation, in exchange for labour on the land. Cot-takes sometimes also included access to grazing land for a cow, or land for the cultivation of flax. Manufacturing farmers sometimes also employed weavers under the cottier system, a practice famously described, vilified and almost certainly exaggerated in its significance by Coote (1802, p. 41).¹²

An alternative means of adding male labour was provided by the kinship or community based cooperative work-team known as a “meitheal.” It seems likely that smallholders were more likely to rely on the meitheal than more substantial farmers (Slater and McDonough 1994, p. 88). In the Cavan study area, we have already seen that those parishes nearest to the major linen markets were characterized by relatively evenly distributed smallholdings, and fewer landless households. The proportions of households headed by labourers were also smaller in these parishes.

If middling farm households were more likely to retain adult sons at home and to hire male servants in order to contribute to the high labour demands associated with tillage agriculture under spade husbandry, why did smallholders strive to hire female servants and to retain adult daughters at home? The most plausible explanation is that the relative importance of female labour to the household economy increased as landholding size approached the “comfortable minimum” described by the Devon Commission. Women and children were more likely to have been responsible for drudgerous tasks such as the collection of manure (McGregor 1992). In addition, the income from flax cultivation and spinning is likely to have increased in significance.

Flax cultivation drew on large quantities of female labour (Crawford 1991, Gray 2003), even though flax tended to be grown in garden plots of about an eighth of an acre – that is, rarely in quantities exceeding the spinning capacity of individual households (Smyth 1988). Arthur Young’s estimates of the expense of an acre of land under flax, compiled at ten locations across the northern linen counties (but not, unfortunately, in County Cavan), give an indication of the allocation of men’s and women’s labour in flax cultivation. Women and children were responsible for removing stones and weeds from the fields, and for pulling the flax when it was ready for harvest. If the seed was to be saved, men did so in a process called ‘rippling.’

Men were also responsible for laying the flax in water to be ‘retted’ – literally rotted in order to break up the fibres – and for taking it out once that process was complete. Women spread the flax onto grass to dry out. Men and women then lifted the flax and carried it home (with the assistance of a horse and cart) where it was often subjected to further drying by a turf fire. The flax fibres were then broken up by ‘beetling,’ and ‘scutching.’ These processes essentially involved beating the flax stalks to remove the outer layers and to break the remaining fibres into strands. Flax could be brought to a scutch mill, but in many places working groups of women did the scutching, in a practice similar to the ‘meitheal’ described earlier. Young’s estimates imply a ratio of between three and four woman days to each man day required in cultivating flax, from weeding and stoning through to beetling and scutching. After scutching the flax fibres were straightened by ‘hackling’ (a sort of combing) in preparation for spinning. Specialist male ‘flax dressers’ could be employed to do this, but spinners frequently did the job themselves (see the discussion in Gray 2003).¹³

<Table 4 about here>

Unfortunately the 1821 census does not provide very reliable evidence on the prevalence of spinning in different households or parishes. Table 4 shows the extent to which adult women were identified as spinners by landholding category in the Cavan study area. In both non-artisan and weaving households, the proportion of adult females identified as spinners was greatest amongst those who were landless, even though the mean number of adult females was lowest in this group. In weaving households, the highest mean number of spinners was observed amongst those with mid-sized holdings, in contrast to non-artisan households where the number of adult females identified as spinners did not increase greatly with landholding size. These findings have to be treated with great caution because the proportion of women for

whom an occupation was recorded in the 1821 census manuscripts, and therefore the proportion identified as spinners, is highly skewed towards a cluster of parishes in the southeast of the study area that were characterized by relatively high proportions of landless labourers on poor quality land (see the discussion in Gray 1999, 2005).

A somewhat different picture is provided by published data from the 1841 census. The percentage of women 'ministering to clothing' by parish in 1841 – a reasonable proxy for spinning - is negatively correlated with the proportion of landless households in 1821 (Spearman's rho = $-.768$, $p. < .000$). It is positively associated with the proportion of households with mid-sized landholdings (Spearman's rho = $.615$, $p. < .007$) and also – albeit more weakly - with the proportion of smallholding households (Spearman's rho = $.442$, $p. < .05$). There is a negative association between spinning in 1841 and distance from the nearest linen market amongst parishes within the study area (Spearman's rho = $-.559$, $p. < .015$).

Even assuming that the 1841 census recorded women's occupations more reliably than that of 1821, aggregate data at the level of parishes can tell us little about the relative *importance* of earnings from spinning in different kinds of households. Moreover, by 1841, daily earnings from hand spinning had halved due to competition from the spinning mills. For landless households this loss of income compounded the distress caused by falling wages in the context of increased population and declining agricultural prices (see O'Neill 1984, especially 108-115). In this context it is interesting to note that labourers' daughters were much less likely than farmers' daughters to be recorded as spinners in the 1841 census manuscripts for Killashandra (O'Neill 1984, pp. 148-149). In sum, census data at both household and individual level suggest that, while spinning may have been an important source of income for landless and labouring households in 1821, by 1841 women in such households were

much less likely to record spinning as an occupation in the context of rapidly falling prices. There is little evidence of variation in the proportion of female labour devoted to spinning between smallholding and medium-holding households – if anything women in the latter category seem to have been more likely to record spinning as an occupation. However, spinning was more prevalent in parishes adjacent to the major linen markets characterized by a smallholding land pattern and few landless labourers.

The evidence presented above is therefore not inconsistent with the argument that, in the context of labour-intensive agricultural production and the opportunity to earn additional income from spinning, the relative importance of women's labour to the small-farm economy increased as landholding size decreased within the Cavan study area. More substantial farmers sought to maximize male labour by retaining adult sons at home and by employing day labourers and cottiers. However, by themselves, the census records provide only a partial understanding of the socio-economic environment within which the members of rural industrial households strove to make a living. In the following section, in order to obtain a richer picture of the political economy of County Cavan, data from the 1821 census are compared with the "Statistical Memoirs" compiled by army officers employed by the Ordnance Survey in 1835.

Local case studies: Drumlumman, and Drung and Larah

There are three parishes for which both census manuscripts and statistical memoirs are available, namely Drumlumman in the southwestern part of the county, and Drung and Larah in the east (see [Map 2](#)). Because the latter two parishes were enumerated together in the 1821 census (see note 2) they will be treated as one parish in this discussion. Lieutenant Andrew Beatty compiled the memoir for Drumlumman

(reproduced in Day and McWilliams 1998, pp. 12-18), while Lieutenant P. Taylor compiled the memoirs for both Drung (Day and McWilliams 1998, pp. 19-24) and Larah (Day and McWilliams 1998, pp. 39-46). At first glance, the census data suggest that the parishes were quite similar in social structure. The mean landholding size in 1821 was between 9 and 10 acres, and just fewer than 10 percent of households had resident weavers in each case. However, in Drumlumman, 47 percent of households held either no land or micro holdings of less than 3 acres, compared to 28 percent in Drung and Larah. Moreover, the Statistical Memoirs make it clear that small landholdings in Drumlumman resulted from the practise of *sub-letting*, whereas in Drung and Larah they resulted from *subdivision*. This difference was at least partly due to Drung and Larah's relative proximity to the long established linen market at Cootehill, and yarn market at Cavan town.¹⁴ It may also have been due to inattentive estate management in Drumlumman. According to Beatty, "No gentleman possessing any property in the parish resides in it, nor do any of their agents. The agents are generally paid by a percentage on the rent collected " (Day and McWilliams 1998, p. 17). Under these circumstances landlords may have been less zealous about removing "middlemen" at the expiration of leases (see note 3).¹⁵

In Drumlumman, farmers who paid their rents wholly in money rented holdings of between 10 and 20 acres under leases of lives. They sublet portions of land, from 3 to 5 acres, to under-tenants who paid their rents partly in labour. Farmers relied principally on spade husbandry to cultivate potatoes, oats and sometimes wheat, but horse-drawn ploughs were used by "the better description of farmers." The farmers burned limestone on their own land for use as manure. Oats, cattle and pigs were bought by jobbers at local fairs and markets who transported

them to the port of Drogheda where they were sold for export to England. Beatty's account suggests that little milling was carried on within the parish.

Forty-three percent of weavers in Drumlumman were heads of households in 1821, most of which had no land attached. Most of the remainder (nearly 50%) were employees or lodgers in farm households; just 7 percent were sons. This suggests that weaving was mainly carried on under the journeyman system whereby farmers put out yarn either to cottiers on their land, or to boarders in their own houses. Such weavers were probably also employed seasonally as agricultural labourers. According to the Statistical Memoir, "Weaving coarse linens is practised by the men in the summertime, when their farming does not occupy all their time. The women are employed in hand-spinning but of later years this [has] not given any fair remuneration for labour" (Day and McWilliams 1998, p. 16). Forty-four percent of women in Drumlumman reported an occupation 'ministering to clothing' in 1841. Curiously, Beatty reported that "The produce of the loom is consumed on the spot." This may mean that linens were manufactured for local consumption only, but it seems more likely that they were purchased by local jobbers (see the discussion in Crawford 1988, p. 50).

The evidence suggests that there must have been a considerable over-supply of agricultural labourers in this parish in the 1830s, and indeed Beatty provides a vivid description of their poverty:

The food of the poorer class consists chiefly of potatoes and buttermilk. In winter they are seldom able to get milk and they substitute a drink made of onions boiled in water. Some of them assert that they are in such poverty at times that they are unable to purchase salt. This seems almost incredible.

Data from the 1841 census on the quality of housing gives a further indication of the extent of poverty in Drumlumman on the eve of the Great Famine. Fully half of all houses were in the lowest, fourth category (H.C. 1843, vol. 24, 298-301), which means that they were one room, mud cabins without windows (M. Crawford 1995, p. 142). Some labourers migrated seasonally in search of work at harvest time, leaving their wives and families behind to support themselves by begging. Beatty estimated that “about 20 or 30 persons” emigrated every year to the United States and Canada.¹⁶

In the parish of Drung farms were subdivided into holdings from two to twelve acres and similarly, in Larah, the land was subdivided “into holdings so minute as to the general average about 8 acres” (Day and McWilliams 1998, p. 46). The farmers were generally “tenants at will,” meaning that they did not hold leases. They employed few servants. In both parishes, agriculture was practised almost exclusively with the loy and shovel; ploughs were “seldom observable upon the holdings” in Larah, and “frequently impracticable” on Drung’s hilly terrain. The principal crops were potatoes, oats and flax in small quantities. Jobbers bought up pigs at local fairs for export to England, while grain was sold first to local corn mills and afterwards brought to surrounding markets for sale for export. In Drung, some of the corn mills also operated as flax scutching mills. In Larah, Taylor commented on the difficulty of manuring the land. As in Drumlumman, lime was used, but in very small quantities. Because the system of green feeding was not practised, “whilst one-half of the soil of the parish lies unproductive, the other half is undergoing a succession of crops with little or no manure.” Moreover, the decline of the linen industry had left the occupying tenant “nothing but the outline of an impoverished soil, which he has not the power of manuring.”

In Drung and Larah, linen weaving was carried on mainly under the farmer-weaver system, using family labour. In 1821, forty-three percent of all weavers were sons, while just over 11 % appear to have been unrelated to the head of household. Most weaving households (73%) held some land. By 1835, however, Taylor reported that in Larah “the noise of the spinning wheel may frequently be heard but the flying shuttle seldom resounds” (Day and McWilliams 1998, p. 44). Sixty-four percent of women in Drung, and fifty-five percent in Larah, reported occupations ‘ministering to clothing’ in 1841. According to Taylor, if it were not for their poverty, most of the inhabitants of the two parishes would emigrate.

Given his sense of the poverty of the people and their holdings, we might expect Taylor to have encountered the kind of desperation that Beattie found amongst the labourers of Drumlumman. Instead, he suggested that the small farmers of Drung and Larah had a cavalier attitude towards agricultural production. In Drung, “A fair or market, wake or wedding will arrest industry in the most critical season and expose to uncertainty the most pressing demands for subsistence or the liquidation of rent” and in Larah, where the “only aim and desire” of “this wretched and deplorable peasantry...is to secure the means of the lowest possible rate of subsistence...Markets and fairs are chief resorts, and much valuable time is sacrificed in these perpetual meetings.” These observations are reminiscent of the “plebian” attitudes to work and leisure that Medick (1976) argued were characteristic of proto-industrial producers who relied on family labour for their subsistence. In contrast to the labourers and cottiers of Drumlumman, who had been reduced to abject poverty by reduced demand for their labour and declining yarn prices, the smallholders of Drung and Larah were surviving, albeit precariously. In 1841, sixty-seven percent of houses were in the middling, third category, with from two to four rooms, and small windows.

Discussion

According to Collins (1982, p. 142), smallholders in north-central Ireland, including County Cavan, were able to adapt to downward pressure on the prices of yarn and cereals, and fluctuations in the prices of flax and in earnings from weaving, because “the options for maintaining a livelihood were spread widely among the varying cash income sources and the cultivation of the food crop, potatoes.” In this context, survival depended on the flexible deployment of family labour to both industrial and agricultural activities. Given the prevailing gender division of labour that assigned women to labour intensive tasks, family based household production units maximized their flexibility by adding or retaining *female* labour. The domestic manufacture of yarn continued under these circumstances because the labour that produced it was both versatile and expandable. On small landholdings women made a vital contribution to agricultural production, including the cultivation of flax, and when not engaged in other tasks, spun almost continuously. Spinning thus formed part of an undifferentiated “package” of female labour contributing to the survival of small-farm households in parishes like Drung and Larah.

The representation of spinning as an “alternative to idleness” is, I believe, more appropriately applied to women residing in households on medium or large farms where male labour – including that supplied by labourers and cottiers – was more important in agricultural production. By contrast, for the wives and daughters of landless labourers, spinning in the face of declining prices would have been an expensive waste of time given their families’ urgent need to find alternatives to their husbands’ lost income. In the absence of land to cultivate flax and food, begging may well have provided a better living.

Differences amongst weaving households clearly reflected differences in the landholding structure. In Drumlumman, farmers relied on sub-letting small landholdings and cot-takes in order to meet their labour requirements. It seems likely that weaving was grafted onto the farmer cottier relationship in this context, as most weavers either held no land or were employed as lodgers or journeymen in households where they were not family members. In Drung and Larah, where an extended period of proto-industrialization had led to the subdivision and relative homogenisation of holdings, weaving households were, like those of the non-weaving majority, organized primarily around family labour. However, while small-farm weaving households did have higher ratios of adult women to men than weaving households with larger landholdings, there is little evidence that they sought to include enough women in their own households to meet the weavers' demand for yarn. It appears instead that in such proto-industrial districts the majority of small-farm households centred their production strategies on a strategic combination of agriculture and spinning. They therefore had higher ratios of adult females to males than any of the other main household types. The entry costs to weaving were significantly higher than those to spinning, especially in the context of declining and fluctuating prices. For this reason a minority of households invested in apprenticeships and looms for their sons. As landholding size approached the minimum necessary to support a family, this represented a means to delay or avoid subdivision while retaining male labour within the household. However, many young men must have been obliged to emigrate from small-farm districts as the opportunity to form independent households through land subdivision diminished. Collins (1982, pp. 140, 143-144) showed that, while women outnumbered men in County Cavan in the decades before the Great Famine (1845-47), when emigration rates were already

quite high, by 1851, when the market for hand-spun yarn had finally collapsed, men outnumbered women in the county (see also M. Crawford 1995, p. 40 and Harris 1994, p. 86).

Conclusion

The insight that marginal increases in the allocation of labour to industrial production at the micro level of individual households, were linked to macro-level changes at the level of social systems, is one of the most compelling aspects of the theories of proto-industrialization (Schlumbohm 1996; de Vries 1993). Scholars have recognized that it was often women's labour that made the difference, but they have not made that observation central to their theoretical understanding of the dynamics associated with demo-economic change. Based on evidence from County Cavan, I have shown in this article that women's labour input functioned differently in different kinds of rural industrial households in Ireland, and that this was reflected in the gender composition of their households. The evidence suggests that small-farm households that combined labour-intensive agricultural production with spinning, and therefore, given the parameters of the gender division of labour, depended to a greater extent on women's work, conformed most closely to the classic proto-industrial family economy described by Medick. This has the potential to clarify some of the ambiguities that have emerged in empirical research on the demo-economic consequences of proto-industrialization in Ireland.

By 1841, high young female nuptiality and continuing rapid population growth were most pronounced in areas characterized by small farms relying on family labour processes and the income from spinning, and where land subdivision had not yet reached its limits.¹⁷ The analysis in this article suggests that these demo-economic

trends did not prevail in other areas where households were engaged in rural industrial activities either because new household formation through land subdivision was no longer viable, or because women's work did not play such a decisive part in household labour strategies. "Second generation" scholarship on proto-industrialization has emphasized that there was considerable variation in how the availability of income from rural industry affected family and household strategies in different agrarian contexts (see e.g. Hendrickxx 2003, Pfister 1996). The evidence from County Cavan suggests that gender was an important mediating factor in those processes.

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Endnotes

¹ Women are more likely to have engaged occasionally in weaving than men are to have engaged in spinning. According to Crawford (1991, p. 260) it is “probable” that women wove during busy times. McKernan (1995) has shown that efforts to encourage women to weave using the fly shuttle had some success in County Armagh in the context of male labour shortages during the Napoleonic wars. Nevertheless, the preponderance of evidence shows that Irish women did not engage in linen weaving to any significant extent until after the mechanization of spinning.

² Strictly speaking, these records cover sixteen civil parishes. However, in the 1821 census the parishes of Drung and Larah were enumerated as though they were one, probably because a small part of Larah is surrounded by Drung (see Map 1).

³ Some landlords were happy to facilitate subdivision in this way, because they believed that otherwise the rental value of their estates was accruing to farmer-middlemen, rather than themselves (see Coote 1802).

⁴ Cunningham (1960) concluded that the landholdings in the 1821 census manuscripts for the parish of Lavey were recorded in Cunningham acres. However, according to O’Neill (1984, p. 91, Table 2.7), Irish acres were the standard measure in County Cavan.

⁵ This pattern is consistent with O’Neill’s (1984, pp. 171-177) analysis of child/woman ratios in the surviving 1841 census manuscripts for the parish of Killashandra, in County Cavan. He found that, after the first three years of marriage, farming women consistently had more children under age five living in their households than labouring women.

⁶ Here, “inmate” refers to a resident not identified either as kin of the head of household, or as a servant. It includes residents without any identifiable relationship to the household head.

⁷ In the parish of Kildrumsherdan in 1835, male servants earned between 4 and 6 pounds per year, and female servants between 2 and 4 pounds per year in addition to their board and lodging (Day and McWilliams 1938, p. 37).

⁸ However, in parts of the province of Ulster, including County Cavan, tenants benefited from the customary observation of ‘tenant right,’ which permitted them to sell their interest in their holdings to another tenant, and thereby to obtain a return from capital investment.

⁹ There were thus somewhat larger, on average, than the mid-sized landholdings in this study.

¹⁰ That is, about 6 Cunningham acres, or 5 Irish acres, assuming that the observation referred to statute acres.

¹¹ The average age of heads of households who were weavers was 40.53, compared to 45.39 amongst farmers (95% C.I. 44.70-46.08) and 43.16 amongst labourers (95% C.I. 42.11-44.21).

¹² The term ‘cottier’ has been used generally by Irish historians to refer to those cottier-labourers who obtained access to land in full or part exchange for labour, and to distinguish them from small tenant farmers and day labourers. Beames (1975) noted that the term was used rather loosely amongst contemporaries. In some parts of the country ‘cottier’ referred to any smallholder, and in others simply to somebody who lived in a cabin, irrespective of the size of their holding or their occupation. Confusingly, Beames identifies Cavan as one of the places where the term ‘cottier’

was used in the latter sense, but it is clear from Coote's account that he was referring to the cottier-labourer system.

¹³ Young's estimates must be treated with some caution, since they did not include the labour costs of ploughing and sowing, and because few growers cultivated so much as an acre. Nonetheless, his estimates are of the same order as those Mendels (1981, pp. 134-135) provided for the cultivation of flax in Flanders. Young (1892, pp. 138-139) did speak to a weaver on the Ards peninsula in East Ulster who grew the more usual 'peck's sowing.' This man did not give a complete breakdown of labour costs by gender, but his account does imply a more even distribution of male and female labour, given that he had his flax rippled (which increased the male labour input), and brought it to a mill to be scutched (which decreased the female labour input). It is not entirely clear why Irish flax sowers rarely saved their seed, relying instead on imported flaxseed from North America. In the fine weaving districts around Belfast the flax stalks were pulled before the seed had ripened in order to produce fine fibres. Elsewhere, according to Gill (1925, p. 34), given the small scale of production in Ireland, and the ready availability of American flaxseed, it may not have been worth the growers' while to set some of the stalks aside to dry before processing them for spinning coarse yarn. At Waringstown, County Down, Young (1892, p. 132) was informed that "Very few save their seed; but this more than usual, owing to the import from America falling off." See also the discussion in Hood (2003).

¹⁴ At their mid-point, Drung and Larah are 11 kilometres from Cootehill. Drumlumman is 19 kilometres from Killashandra at its midpoint, although the satellite market towns of Arva and Ballynagh are nearer. However, these linen markets in the west of the county were less well established than those in the north-

east, and so the processes associated with land subdivision had had less time to develop.

¹⁵ It should be noted, however, that Beatty also referred to the activities of Lord Farnham, a famously improving landlord, in establishing a school and in contributing to the cost of constructing farm buildings, in parts of the parish.

¹⁶ The regional concentration of the linen industry around Belfast associated with the mechanization of spinning led to an increase in emigration from the western and southern counties of Ulster in the 1830s. See Collins 1982, esp. p. 140 and O'Grada 1994, p. 76.

¹⁷ The latter could be determined by a whole range of factors, including the availability of waste land, inattentive estate management, or the practise of holding land in common.

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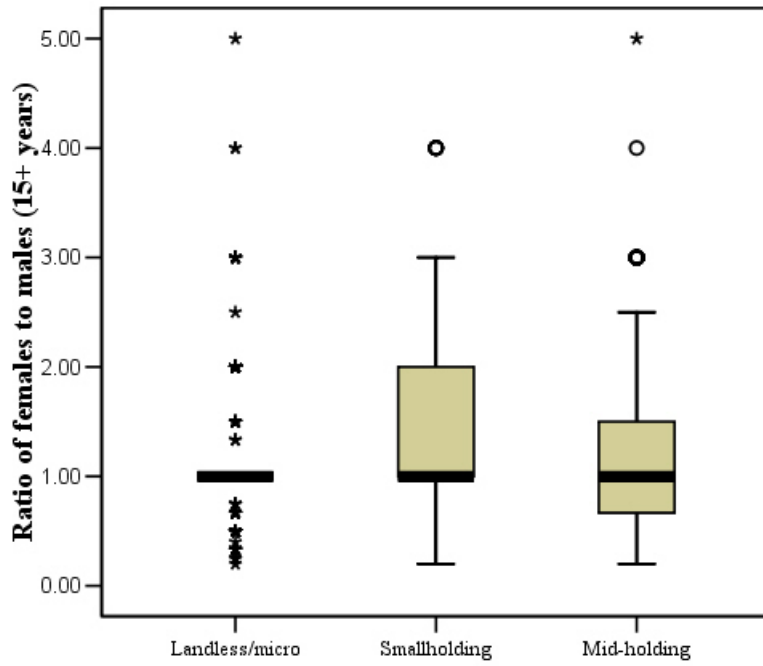


Figure 3. Boxplot of adult sex ratio per household by landholding category. Source: Cavan Sample. See text for details.

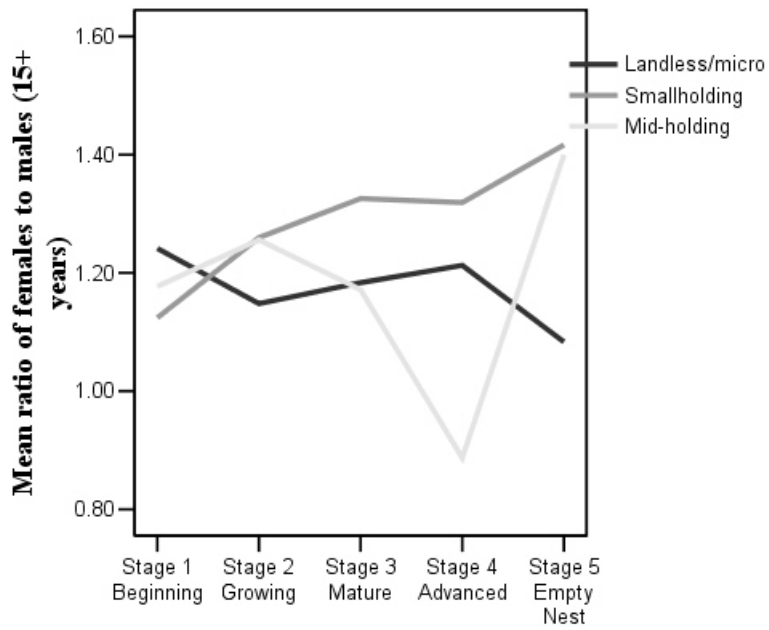


Figure 4. Sex ratio per household by landholding category and family life cycle stage. Source: Cavan Sample. See text for details

Figure 5. Non-Artisan Landless Households. Household Composition by Wife's Age Category

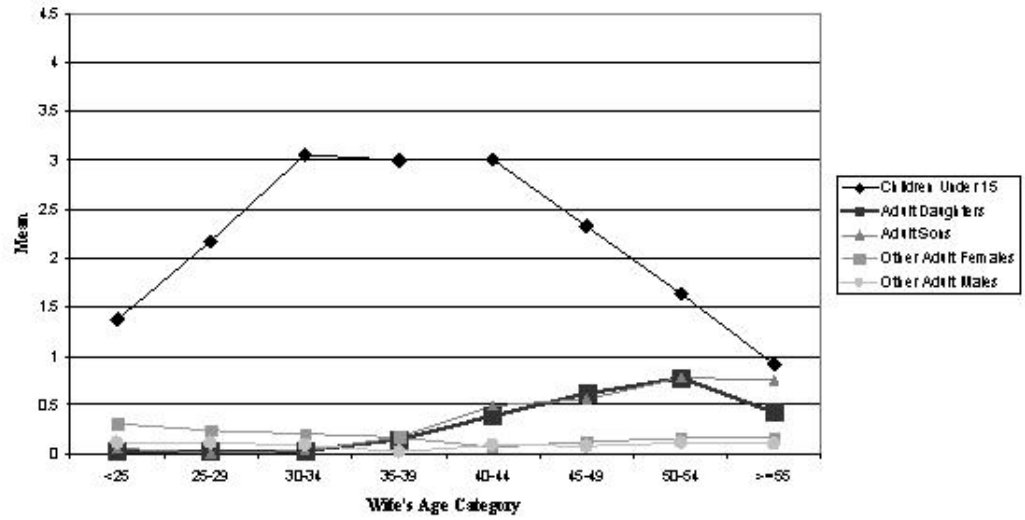


Figure 6. Non-Artisan Smallholder Households. Household Composition by Wife's Age Category

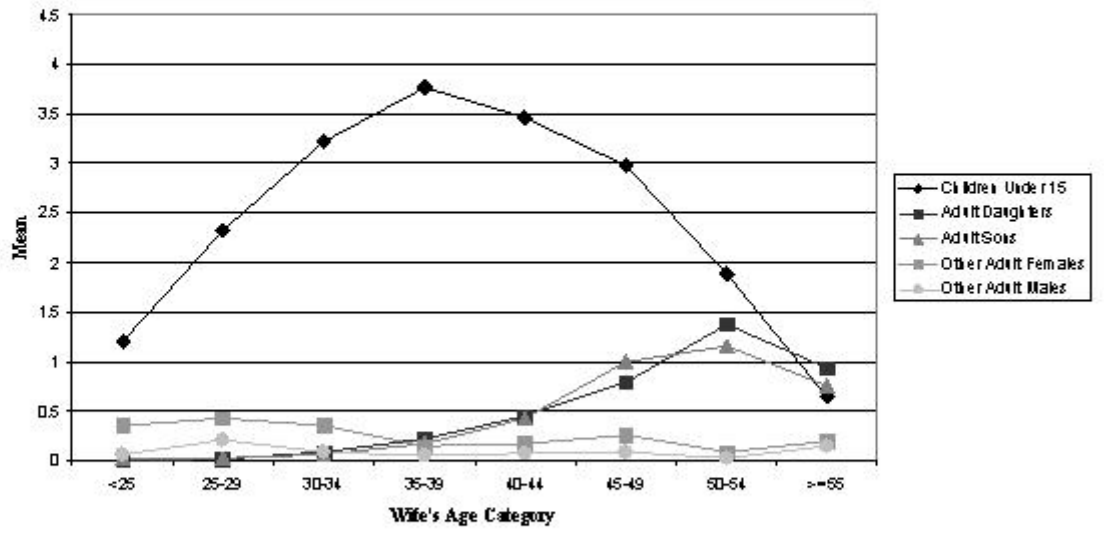


Figure 7. Non-Artisan Medium Holding Households. Household Composition by Wife's Age Category

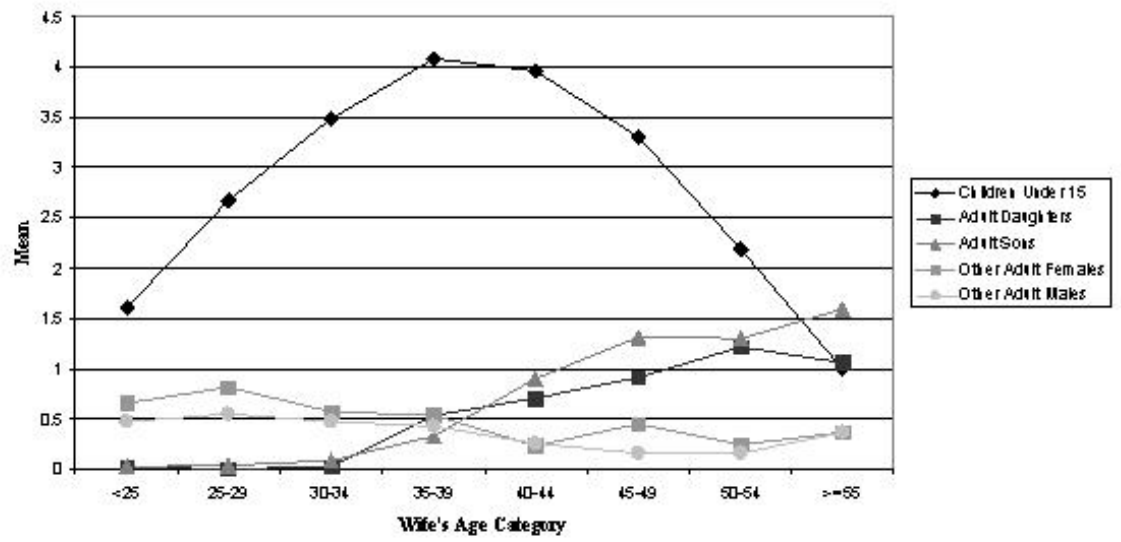


Table 1. Ratio of Adult Females to Males in Non-Artisan Households by Landholding Category and Family Life Cycle Stage

	Landholding Category								
	Landless/Micro			Small Holding			Medium Holding		
Family Lifecycle Stage ¹	N	%	Sex Ratio	N ¹	%	Sex Ratio	N	%	Sex Ratio
1.Beginning ²	29	5.6	1.24	43	7.7	1.12	16	3.9	1.18
2.Growing	317	61.7	1.15***	310	55.2	1.26	187	45.3	1.26
3.Mature	116	22.6	1.18	150	26.7	1.33	168	40.7	1.17*
4.Advanced	34	6.6	1.21	52	9.3	1.32	37	9.0	0.89***
5.Empty	18	3.5	N/A	6	1.1	N/A	5	1.2	N/A
Nest									
All Stages	514	100	1.16***	562	100	1.27	413	100	1.19***

Difference from smallholders * p. <.10; *** p. <.01. Mann-Whitney Test.

1. Family lifecycle stage could not be determined for one household

2. Beginning – Wife less than 50 years, no children; Growing – Children less than 15 years only; Mature – Children less than 15 years and 15 years or more; Advanced – Children 15 years or more only; Empty nest – Wife 50 years or more, no children.

Table 2. Non-artisan households in each landholding category, by presence of different kinds of adult residents

% Households with one or more adult (15+ years)					
Females					
Landholding Size	N	Daughters	Servants	Relatives	Inmates
Landless	514	18.9	2.7	5.9	7.8
Smallholding	562	25.3	12.5	6.2	6.0
Mid-holding	413	33.4	27.8	6.8	10.7
Males					
Landholding Size	N	Sons	Servants	Relatives	Inmates
Landless	514	20.6	1.8	2.1	3.5
Smallholding	562	25.5	4.8	2.0	2.5
Mid-Holding	413	40.4	23.2	4.6	6.8

Source: Cavan Sample.

Table 3. Weaving households in each landholding category, by presence of different kinds of adult residents

% Households with one or more adult (15+ years)					
Females					
Landholding Category	n	Daughters	Servants	Relatives	Inmates
Landless/Micro	366	15.8	4.9	4.9	9.3
Smallholding	282	29.4	14.2	8.1	7.1
Mid-holding	258	47.3	30.2	5.5	10.1
Males					
Landholding Category	n	Sons	Servants	Relatives	Inmates
Landless/Micro	366	23.5	1.1	3.8	14.2
Smallholding	282	36.5	4.3	5.4	16.3
Mid-Holding	258	65.9	17.4	5.5	31.0

Source: Cavan Sample

Table 4. Spinning in each household by landholding category

Landholding category	N/n	Households with one or more spinners (%)	Mean per household		
			Adult females	Spinners	Percent adult females spinners
Non-artisan households (N)					
Landless/micro	514	53.9	1.43****	0.76	55.6*
Smallholding	562	53.7	1.65	0.83	49.4
Mid-holding	413	54.5	2.02****	0.94	46.4
Weaving households (n)					
Landless/micro	366	53.8	1.43	0.76	55.7
Smallholding	282	52.5	1.77	0.78	44.8
Mid-holding	258	64.7	2.25	1.27	54.3

Source: Cavan Sample

Difference from smallholders * p. < .10; **** p. < .001. Mann-Whitney test.