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A POOR INQUIRY: POVERTY AND LIVING STANDARDS IN PRE-FAMINE IRELAND

Áine Doran (Queen's University Belfast)

Working Paper 21-01

QUEEN'S UNIVERSITY CENTRE FOR ECONOMIC HISTORY
Queen's University Belfast
185 Stranmillis Road
Belfast BT9 5EE

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A Poor Inquiry: Poverty and Living Standards in Pre-Famine Ireland*

Áine Doran†

Abstract

This paper studies the relationship between pre-famine living conditions and famine severity. I digitise the parish-level returns of the *Irish Poor Inquiry* and use these to explain the co-variates of increasing poverty in the early nineteenth century and examine how they impacted the severity of The Great Famine. I find that income acted as a key co-variate of increasing poverty, with the poor becoming poorer. However, it is levels, not changes, of poverty which are found to be a key determinant of famine severity, alongside the structural features of parishes, such as their distance from the nearest navigable waterway. The paper also fails to find evidence of increasing poverty or famine severity being a result of overpopulation.

Keywords: poverty, living conditions, famine, Ireland, demography.

JEL Classification: J10, I32, N33.

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† Queen's Management School, Queen's University Belfast, Belfast BT9 5EE, United Kingdom. Email: adoran13@qub.ac.uk.

1. Introduction

Famines have been a feature of developing societies for centuries. While many countries have experienced famines, there has been variation in the severity of their effects, both within and between countries. This paper aims to add some understanding to why this variation exists by studying to what extent pre-famine living conditions matter for famine outcomes. This will be done using the case of Ireland in the nineteenth century. The Great Irish Famine of 1845-52 had one of the highest death rates compared to famines that happened across the world both before and after. The estimated death rate of 12 per cent is second only to the death rate of the Irish famine a century prior (Ó Gráda, 2007). The decades before the Irish famine were characterised by poverty and poor living conditions. The experience of these decades may offer some explanation as to why the Irish famine was so severe.

The period before the famine, however, has been somewhat overlooked in the historiography, which is largely due to the paucity of data sources. There is one source though which provides great insight into the conditions in Ireland, particularly the conditions of the poor, in the decades before the famine. The *Irish Poor Inquiry* of 1833 to 1836, commissioned by the British Government, sent surveys to clerics and landowners in parishes across Ireland asking questions on the conditions of the poorer classes. More than 1,600 responses were returned, with the reports of the *Poor Inquiry* containing parish-level information on issues such as wages, diet and housing, making it a valuable source for studying life in pre-famine Ireland and how these conditions may have influenced famine severity.

In this paper, I address the following three questions. First, how reliable and credible is the Irish Poor Inquiry as a source for capturing pre-famine living conditions? Second, having established the credibility of the source, I ask how pre-famine living conditions varied across Ireland's 2,000 plus parishes and analyse the covariates of poverty. Finally, I investigate the relationship between pre-famine poverty and famine severity.

The use of survey data for empirical work concerns many economists (Blinder, 1991; Boulier and Goldfard, 1998; McCloskey, 1983, 1985; Shiller, 1991). Its use in economic history is particularly rare. To help address these concerns, I carry out extensive testing and analysis of the data in the *Poor Inquiry* to assess both the internal and externally validity of the results which will be obtained. The *Inquiry* contains responses from different representative groups, and in some cases multiple responses from a single parish. This allows for the comparison of responses within parishes and between respondent groups. The comparison shows the responses to be largely consistent, with no evidence that one group reports significantly different responses to another. When there are more than one set of responses for a parish, these also appear to be largely consistent. Comparison to the *1841 Census of Ireland* also provides reassurance that the parishes which return surveys are representative of Ireland. The returns are not biased towards parishes which are any more of less poor than average. While the returns of the *Poor Inquiry* represent only half of all parishes, the sample is found to be spatially diverse. Overall, the *Poor Inquiry* represents a robust data source to study the conditions of the poor in pre-famine Ireland.

To measure the changes in poverty, the responses to a *Poor Inquiry* question on conditions is used. This was previously done by Mokyr and Ó Gráda (1988) for a county-level analysis of conditions of Ireland. A negative relationship between wages and conditions indicates increasing poverty was driven by poorer parishes becoming poorer, resulting in growing inequality in the lead up to the famine. However, using parish as opposed to county-level conditions suggests that the deterioration may not have been as widespread as previously thought. In addition, the results fail to show evidence of the deterioration in conditions being a result of increasing population. Parishes which reported their population to have either increased or stayed stationary are less likely to have reported deteriorating conditions compared to those which reported a falling population. A weak correlation between emigration and

deterioration suggests that emigration is not masking a relationship between population pressure and deterioration. There is also no evidence found to suggest the geographical makeup of a parish influenced living conditions. Proximity to the coast, navigable waterways or roads had any significant effect on reported conditions. I conclude that the deterioration in conditions of the Irish poor in the first half of the nineteenth century were largely explained by diverging income.

The final area this paper studies is how pre-famine living conditions impacted famine severity. Ireland offers several advantages in answering this question. Firstly, the *Poor Inquiry* gives details of the day-to-day living conditions of the poorest in society. Secondly, the Irish Famine had one of the highest mortality impacts ever to occur so provides an example of an extreme famine outcome. Finally, despite the overall severity of the famine, there was variation in the severity throughout Ireland. This is highlighted in Figure 1 which plots parish-level famine severity. This is measured using the parish-level population change between the *1841* and *1851 Censuses of Ireland.* The greater the population loss, the greater the severity of the famine. While the western half of the country overall does experience greater population decline following the famine, substantial variation between parishes can be seen. This variation in severity is exploited to understand how pre-famine conditions effect famine outcomes.

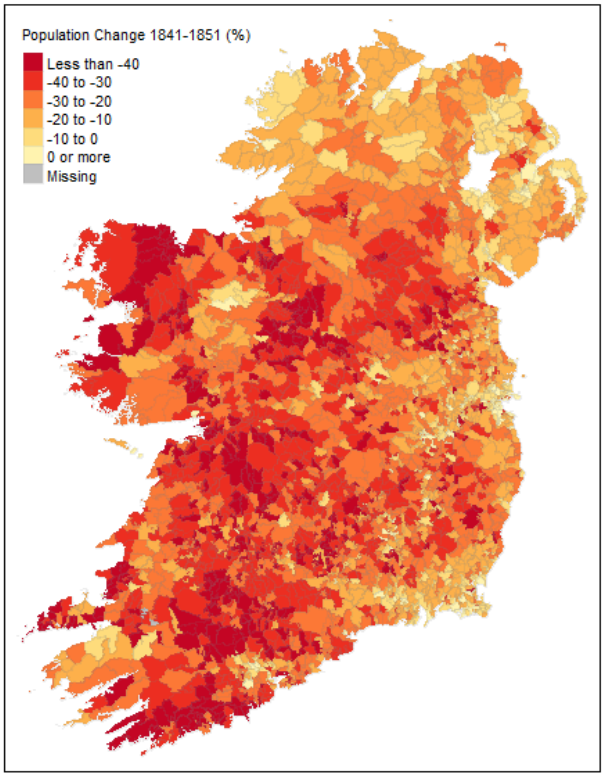
Sen (1981) argued famine to be an entitlement problem, with those exposed to poverty more likely to face entitlement failure. The results in this paper find that reported increases in pre-famine poverty did not make a parish more vulnerable to increased famine severity. However, absolute poverty does have a negative effect on population. Therefore, it is levels of, not changes in, pre-famine poverty which made a parish more vulnerable to famine.

Other factors are also found to determine famine severity. The geography of a parish, such as its distance from the coast or its longitude and latitude, plays a larger role in explaining famine severity, with effects persisting after differences in income are controlled for. This

would suggest that Ireland's famine population loss may have had more structural, underlying causes than just increasing poverty following the Act of Union or end of the Napoleonic Wars, and may explain why Irish famines were so much more severe. Therefore, it is not just pre-famine conditions but also physical features which may explain differences in famine outcomes.

Also interesting are the factors which have little to no effect on famine severity. The results show that having an alternative food source to the potato, such as fish, has only a small effect on population loss. This would suggest that, in the case of Ireland, the calorie loss following the failure of the potato was too great to be adequately replaced with the other available food during the famine. As with pre-famine poverty, population increases are once again found to not increase vulnerability. The relationship between early nineteenth century Ireland and population has been long debated. Some argue Ireland displayed signs of Malthusian style population pressure (Connell, 1950; Galbraith, 1979), while others argue Ireland could support an even higher population than it had (Blacker, 1846; Mokyr, 1983; Sadler, 1829). Malthus (1798) presented famine to be the ultimate positive check, with the experience of Ireland seeming to validate this. However, the results of this paper do not fully support this Malthusian view of Ireland. If Ireland was suffering population pressure, it was more likely due to population growth which had taken place in the eighteenth century as opposed to in the early decades of the nineteenth century.

Figure 1. Population Change between 1841 and 1851



Source: 1841 and 1851 Censuses of Ireland

This research makes some key contributions to existing literature. It builds on the existing work of Mokyr and Ó Gráda (1988) to add further understanding to the increasing poverty in pre-famine Ireland. By testing the reliability of the *Poor Inquiry* and using many of its questions, a range of factors correlated with increasing poverty have been identified. This new addition to the historiography of nineteenth century Ireland allows for a better understanding of the context in which the famine occurred. This offers valuable lessons not only for understanding why Irish famines were so severe, but for famines in general. Knowing which factors do and do not increase vulnerability aids our understanding of famines and how to assess their impact. Many famines have occurred at times of high population pressure on available resources (Alfani and Ó Gráda, 2017). Given the results of this paper fail to find support for population pressure contributing to famine severity, this suggests other factors are also important in understanding the outcomes of famines. This paper addresses some of these factors.

The next section of the paper will give an overview of pre-famine Ireland and some of the ways living conditions there have been studied previously. Section 3 will outline the data used, with Section 4 assessing the reliability of this data. In Section 5 the covariates of poverty will be identified, followed by Section 6 examining how these impact famine severity. Section 7 will contain the paper's concluding remarks.

2. Poverty in Pre-Famine Ireland

Poverty was a common feature of life in pre-famine Ireland, with accounts by contemporaries depicting the bleak existence of the Irish. Wakefield (1812, p.730) tells of a place where "human nature was degraded to the lowest state of misery". Ireland had an income per capita of £10, less than half the rate recorded in neighbouring Britain (Mokyr, 1983). Agricultural labourers in Ireland also earned approximately half as much as their English counterparts (Fernihough and Ó Gráda, 2018) and were experiencing a higher rate of falling wages (Geary, 1995). By 1841, two-fifths of families were living in one-bedroom tenements, with many left unable to attend church or school due to a lack of adequate clothing (Ó Gráda, 1993). The Devon Commission (1843-1845) found Ireland to have one of the lowest living standards in Europe.

Various indicators have been used to measure Irish living standards. They present a mixed view of conditions. Mokyr (1983) and Mokyr and Ó Gráda (1988) calculated a county-level "subjective impoverishment index" (SII) using the responses to a question in the *Poor Inquiry*. Their index showed the overall condition of the poor had deteriorated. The decline in cottage industries and an increasing number of small farms were found to be key factors in explaining this. This paper builds on the work of Mokyr and Ó Gráda (1988) by using the parish-level responses to multiple *Poor Inquiry* questions to gain further understanding of the factors correlated with the deterioration of living conditions.

Import data have also been used to study poverty in Ireland because consumption of tea, sugar and tobacco were seen to be indicators of higher living standards (Mokyr and Ó Gráda, 1988). Analysis shows an increasing trend in their consumption in early nineteenth century Ireland. Given the poorest would rarely, if ever, consume these products with any form of regularity this points to growing inequality in Ireland, not decreasing poverty.

Literacy rates are another indicator of living standards. Irish literacy during the early 1800's were increasing (Mokyr and Ó Gráda, 1988). Rates were higher than those of Italy and Spain, and similar to levels in France and Belgium. The Irish literacy rates were higher than those typically experienced by low-income groups, so while they were financially poor, they were better off in terms of education.

In the absence of other sources, anthropometric data have become a measure of historical living standards. Mokyr and Ó Gráda (1988) and Nicholas and Steckel (1992) have found the Irish to have a height advantage compared to their counterparts in Britain and Europe. However, heights present some issues when measuring living standards. Data are normally gathered from military or prison records and often only refer to a small, unrepresentative sample of the population. This choice based selection bias has been the topic of several articles by Bodenhorn et al. (2013, 2014, 2017, 2019b, 2019a). Height is also determined by nutrition and may not be a good indicator of living standards (Sandberg and Steckel, 1980). This is shown by the tall heights recorded by the early nineteenth century Irish. Their reliance on the potato provided them with a high calorie and nutritious diet (Ó Gráda, 1993). However, poverty was commonplace. Heights therefore provide insight to the biological living standard as opposed to overall Irish living standards.

Dependence on the potato has become synonymous with Irish poverty. Salaman (1943, p.30) concludes it held the Irish "in stranglehold for over two centuries… and invited their oppression". However, the potato offered a distinct advantage. It is only single, cheap food

source which can support life when fed as the sole article of diet (Davidson and Passmore, 1965). This was the case for approximately three million 'potato people' who relied solely on the potato for food (Ó Gráda, 1993). In addition to the height advantage, the potato also gave the Irish other health benefits. One was a low mortality rate. Ireland's pre-famine death rate is estimated to have been 23.7 (Mokyr, 1983), considerably lower than the average rate of 28.8 for Europe (Ó Gráda, 1995). The high nutritional content provided by the potato meant the Irish suffered less from diseases such as scurvy, pellagra and xerophthalmia which were common amongst the poor in other societies (Ó Gráda, 1993).

Their diet also allowed the Irish to marry younger and have more children (Mokyr, 1981), resulting in an increasing Irish population (Connell, 1950). Between 1700 and the onset of the famine, Ireland's population is estimated to have quadrupled (Guinnane, 1994). Similar relationships between the potato and population growth have been found across Europe. Nunn and Qian (2011) found the introduction of the potato to account for approximately 25 per cent of Old World population growth during the eighteenth and nineteenth centuries. The doubling of the Swedish population between 1750 and 1850 has also been largely attributed to the diffusion of the potato (Berger, 2019).

It is clear the pre-famine Irish presented somewhat of a paradox, with different indicators presenting different views on their living standard. By using the wealth of data contained within the *Poor Inquiry*, this paper will give an in-depth look at the living standards of the Irish poor and the factors contributing to them.

3. Data

3.1 The *Poor Inquiry* Survey

This paper uses data I have digitised from the *Royal Commission on the Condition of the Poorer Classes in Ireland* (Parliament, House of Commons, 1836), commonly referred to as the *Poor*

Inquiry. Poverty in Ireland had been of concern to the government since the end of the Napoleonic Wars and was the focus of several select committees (Ó Ciosáin, 2014). The *Poor Inquiry* sat from 1833 to 1836 and followed in the steps of the preceding 1832 inquiry in England and Wales. The committee used two methods to study conditions in Ireland - oral hearings and surveys. Surveys were sent out to clergy and gentry surveying them on the conditions of the poor in their parish. A total of 7,500 surveys were sent, equating to an average of about five surveys per parish. In total 3,100 surveys were returned to the Inquiry, of which 1,636 are in the appendices to the *Poor Inquiry's* reports. These covered 1,187 of Ireland's 2,404 civil parishes[1].

The *Poor Inquiry* argued against the implementation of a workhouse system similar to England and Wales. Instead, it suggested voluntary associations for poor relief should be established, along with programmes of assisted migration and investment in education, agriculture, and infrastructure. The government, however, preferred a compulsory system and therefore rejected the findings, and commissioned a new inquiry to produce more favourable recommendations (Ó Ciosáin, 2014). Because of this limited effect on government policy, the *Poor Inquiry* received little attention from contemporaries and limited research has been conducted using the source material. Individual questions within the survey have been used to study topics as diverse as diet (Clarkson and Crawford, 2001), household budgets (Cullen, 1989) and illegitimacy (Connell, 1965). It was also used by Mokyr (1983) to calculate wage estimates in his study of the Irish Famine.

The *Poor Inquiry* has many advantages as a source. It encompasses over 1,000 different parishes in Ireland and provides the "most substantial and comprehensive examination

[1] The *Poor Inquiry* does not state why the other 1,464 returned surveys were not printed. It is my assumption that they were either duplicates or returned completely, or mostly, blank.

undertaken of pre-famine society" (Ó Ciosáin, 2010). The responses to the survey contain insight to multiple dimensions of poverty and living standards.

Excluding a small number of completely or predominately blank returns leaves a sample of 1,404 surveys. I have digitised the answers to questions pertaining to living standards, apart from those without quantifiable or comparable responses. For example, questions to which most responses were comments such as "numerous" or "too many to count" have not been used. The questions I use in this paper focus on topics relating to diet, housing, wages, and population. A full list of questions used and how they were recorded can be found in Appendix 2 of this paper.

Table 1 gives a breakdown of the respondents to the survey. Religious respondents represent nearly 70 per cent of the sample. This may be driven by the large proportion of absentee landlords in Ireland during the period (Ó Gráda, 1995), religious leaders being more prone to responding as they are more likely to have day-to-day interaction with the poor or simply more surveys being sent out to members of the clergy. Approximately 30 per of religious respondents can be explicitly identified as Catholic or Church of Ireland clerics[2]. It is important to note the data is based on these respondent's *perceptions* of conditions. However, respondent's perceptions should provide a relatively accurate representation of conditions given they would be heavily involved in daily parish life.

Table 1. *Poor Inquiry Respondents*

Respondent	**Frequency**	**Per cent**
Gentry	426	30
Religious	977	70
(Roman Catholic)	321	22
(Church of Ireland)	151	11

Source: Author's calculations based on The Royal Commission on the Poorer Classes in Ireland, Supplement to Appendix (D.) Where possible the religious denomination of clerics has been recorded. Gentry includes landowners and Justices of the Peace.

[2] During this period, all clerics had the title Reverend. It has only been possible to identify the religion if the respondent included the initials P.P after their name to denote parish priest or by specific names.

A great deal of impressionistic contemporary evidence suggested that there had been immiseration of the poor since the end of the Napoleonic Wars (Ó Gráda, 1995). The *Poor Inquiry* tapped into this sentiment by asking respondents "Is the general conditions of the poorer classes in your parish improved, deteriorated or stationary since the Peace, the year 1815?" (*Q.18 Appendix (E)*). The responses can be split into five categories, ranging from "much deteriorated" to "much improved". However, the five levels are subjective and somewhat arbitrary. What one respondent may see as "much deteriorated" another may record as "deteriorated". To reduce the potential for subjectiveness, we can recast the "change in conditions" as a binary variable, where conditions have either "deteriorated" or "not deteriorated." It must be noted that the responses to this question do not measure absolute poverty, only changes in poverty over the previous 18 years. For example, a parish which was extremely poor in 1815 and remained extremely poor until the time of the Inquiry would see the conditions recorded as unchanged.

The remaining questions cover factors which may contribute to respondent's views of conditions, including diet. Table 2 presents an overview of the typical daily diet in pre-famine Ireland. All parishes recorded the eating of potatoes every day. There was variation in what foodstuffs were eaten alongside the potato. In 18 per cent of parishes, the potato is the only food source reported, with no other food being part of the daily diet.

Table 2. *Daily Diet in Poor Inquiry Parishes*

Food Stuffs	**Parishes where eaten (%)**
Potatoes	100
Milk	69
Fish	33
Oatmeal	26
Bread	5
Eggs	5
Butter	6
Meat	5
Only Potatoes	18

Source: Author's calculation based on Royal Commission on the Poorer Classes in Ireland, Supplement to Appendix (D.) Responses to Question 3 on the ordinary diet of the poor.

The *Poor Inquiry* also reflects the debate surrounding early nineteenth century Irish poverty and over population. Respondents were asked if population in their parish had increased, decreased, or remained stationary since 1815. Over 70 per cent of parishes report an increase in population. A measure of population density has also been calculated for each parish. These variables will be key to understanding if population pressure was contributing to the changing conditions.

3.2 Additional Data

In addition to the *Poor Inquiry* data, some variables from other sources will be used to explain changes in pre-famine poverty and famine severity. They will include measures such as physical attributes of a parish and land value. The minimum distance from the parish to the nearest coast, navigable waterway or road in kilometres have been calculated using GIS techniques. The famine impact, land value, vested means and proportion 4th class housing variables are all based on returns from the 1841 and 1851 censuses. Famine impact is measured using per cent population change between 1841 and 1851. The vested means variable captures the proportion of those with landholdings of over 50 aces and those with substantial amounts of capital or wealth.

Table 3. *Summary Statistics of Non-Poor Inquiry Variables*

Variable	N	Mean	St. Dev	Min	Max
Population Density	1,404	0.18	0.24	0.01	2.31
Coastal Distance (km)	1,404	29.44	23.48	0.27	91.78
Canal Distance (km)	1,404	23.49	26.30	0.13	115.77
Road Distance (km)	1,404	19.32	23.81	0.02	121.77
Latitude	1,404	53.45	0.99	51.49	55.32
Longitude	1,404	-7.48	1.07	-10.36	-5.45
Famine Impact	1,404	-24.73	12.96	-74.35	52.93
Land Value per Acre	1,404	6,785.27	5,991.25	74	111,173
Vested Means	1,404	2.37	1.68	0	19.76
Proportion 4th Class Housing	1,404	33.61	16.59	0	100

Note: These are the summary statistics of Non-Poor Inquiry variables for all the parishes contained in the Poor Inquiry reported returns. Sources: Census of Ireland 1841, Census of Ireland 1851, GIS.

4. Reliability of the Data from the *Poor Inquiry*

Qualitative reports, by their subjective nature, are potentially unreliable. The subjects of interviews have no incentive to respond truthfully or thoughtfully (Blinder, 1991). There is also a risk that what people report will depend upon the questions they are asked and their interpretation of them (Mackerron, 2012). An advantage of the structure of the *Poor Inquiry* is that the questions, except for a few, were asked in very structured ways which did not leave room for interpretation. If some degree of random variation does exist between individual's interpretations, they can be regarded as a source of measurement error, provided the interpretations are not completely different (Kahneman and Krueger, 2006).

One drawback the Inquiry does present is the lack of concrete definition as to who constitutes the "poor". This was left to the individual interpretation of both the commissioners and the respondents. There may therefore be some variation in responses driven by different interpretations of who exactly the question relates to. To address the concerns surrounding

using survey data, this section will assess the reliability and credibility of the *Poor Inquiry* responses.

The first issue to address is whether the sample of parishes in the *Poor Inquiry* are representative of the whole of Ireland. A comparison of means between the population of the *1841 Census* and the sample of *Poor Inquiry* parishes can test this. This is presented in Table 4. Proportion of 4th class housing is used as a proxy for poverty (Fernihough and Ó Gráda, 2018). There is no statistically significant difference in the proportion of 4th class housing between the *Poor Inquiry* and Census parishes. The latitude and longitude measures are also consistent, indicative of the sample being spatially diverse and not clustered.

Table 4. *Poor Inquiry and 1841 Census Comparison*

	Poor Inquiry (n=1,187*)		*1841 Census* (n=2,404)			
	Mean	St. Dev	Mean	St. Dev	t-stat	p-value
Population Density	0.123	0.116	0.657	22.77	0.808	0.419
Famine Impact	-25.68	13.41	-25.63	14.78	0.098	0.922
Proportion 4th Class Housing '41	5.93	2.92	5.91	3.16	-0.183	0.855
Latitude	53.27	0.93	53.17	0.87	-1.267	0.205
Longitude	-7.59	1.07	-7.59	1.06	0.000	1.000

**Note: Given some parishes had multiple surveys returned, in this case each parish is only counted once so as not to skew the means. Sources: Author's calculation based on Census of Ireland 1841, Census of Ireland 1851, GIS.*

Now that we have been assured of the representativeness of the overall *Inquiry* we can turn to the responses. Before assessing the reliability of the responses themselves, we must first address the reliability of the respondents and concerns that differing political views may have influenced responses. For example, were the Catholic clergy more inclined to give negative responses in order to reflect poorly on the political union with Britain than their counterparts?

Ó Ciosáin (2014) analysed all responses and found only two from Catholic clergy with an explicitly political dimension[3], suggesting this should not be of concern.

There may also be concern that there may be differences between the gentry and clerics' responses beyond political motivations. For example, it is plausible that landowners gave more positive responses to make themselves look better. An advantage of the *Poor Inquiry* is that some parishes returned surveys from multiple respondents. This allows us to address the above concerns by testing responses from within the same parish to measure whether answers from different respondents were consistent or systematically different. Of the 1,404 returns, 823 of them are parishes with more than one return.

To begin, a simple comparison of summary statistics of numeric variables is carried out across the two respondent groups. These are reported in Table 5. Of the six variables, the only one in which there is a statistically significant difference is annual earnings. The nature of the wording of this question may help explain this. The question asked "*What in the whole might an* average *labourer, obtaining an* average *amount of employment, both in day-work and task-work, earn in the year, including harvest-work and the value of all his other advantages and means of living?*" As there are so many elements included in this, respondents are likely to have varied in their aggregation of the total amount. While statistically significant, the difference is only 14 shillings, so the economic significance is extremely small.

[3] Both were by respondents in Galway City who dated their reported deterioration of conditions back to the Act of Union.

Table 5. *Comparison of Means across Respondent Groups for Parishes with Multiple Returns*

	Religious N=552		Gentry N=265			
	Mean	St. Dev	Mean	St. Dev	t-stat	p-value
Annual Earnings	206.49	68.72	220.72	65.58	2.68	0.0075**
Food	137.12	53.30	130.52	49.31	-1.55	0.121
Average Wage	9.14	1.99	8.97	1.86	-1.67	0.243
Rent	31.80	12.16	31.44	11.07	-0.38	0.705
Female Wage	5.70	1.82	5.61	1.72	-0.59	0.550
Child Wage	4.24	1.35	4.14	1.20	-1.04	0.300

Source: Author's calculation based Royal Commission on the Poorer Classes in Ireland, Supplement to Appendix (D.) and Appendix (E.).

Table 5 compares averages overall for religious and non-religious respondents across all parishes that have multiple returns. It is also possible to look at within parish responses to some questions. Tables 6 is a contingency tables of the responses to the questions on the conditions of the poor and the conditions of clothing. Both crosstabulations indicate the presence of a strong relationship as the majority of the observations are counted along, or close to, the main diagonal and a chi-squared test comfortably rejects the null of no relationship in both instances. One group does not appear to be persistently giving different responses to the other within the same parish. This provides further reassurance of the consistency and reliability of the data.

Table 6. *Contingency Table of Responses to Change in Conditions and Clothing*

General Conditions - Gentry	General Conditions - Religious						
	Much Deteriorated	Deteriorated	Stationary	Improved	Much Improved	NA	Total
Much Deteriorated	12	6	1	2	1	0	22
Deteriorated	10	16	3	5	0	5	39
Stationary	4	13	24	12	0	3	56
Improved	1	15	14	16	3	0	49
Much Improved	1	0	3	4	4	1	13
NA	2	1	1	0	0	1	5
Total	30	51	46	39	8	10	184

χ-squared = 98.602, df = 25, p-value = 1.078e-10

Clothing Conditions - Gentry	Clothing Conditions - Religious						
	Very Bad	Bad	Poor	Average	Good	NA	Total
Very Bad	11	4	2	1	2	1	21
Bad	6	16	4	2	2	2	32
Poor	4	8	10	5	2	0	29
Average	3	5	7	8	5	1	29
Good	2	4	8	5	25	7	51
NA	1	2	4	1	4	4	16
Total	27	39	35	22	40	15	178

χ-squared = 92.96, df = 25, p-value = 9.363e-10

The accuracy of the responses can also be assessed using comparison to other sources from the time. Table 7 outlines the summary statistics for variables relating to living costs and wages. In the few cases where respondents reported annual as opposed to daily wages, daily rates are calculated using the assumption of 200 working days in the year. This is a larger number of working days than referenced in some previous literature (Ó Gráda, 1993). However, several responses in the Inquiry state 200 to be the average number of working days for the labouring class. This is also similar to Mokyr's (1983) estimate when he used the wage data from the *Poor Inquiry*. Mokyr notes the procedures used to calculate wage estimates will

be crude and based on several simplified assumptions but will still provide a relatively accurate representation of actual earnings. Reassurance of the accuracy of these estimates can be found in comparison to other estimates for the same period. O'Brien (1921) finds the average wage was 10d a day in 1816 and 8d in 1821. The average wage found by O'Brien for women and children was between 4d and 6d, the same as reported in the Table 7. The estimates of the respondents appear externally consistent with other data sources. The responses are also largely internally consistent. While many of the variables have large ranges, this is evidence of the variation between parishes, not a sign of misreporting. For example, the maximum reported rent was 100 shillings, much greater than the average value of 32. This high value was reported by several parishes, all based in County Dublin and so appears consistent. The same can be said for the other extreme values. The one exception is the reported seven-shilling rent. This pertains to Ballynakill and appears to be due to misreporting as it is substantially lower than the other four reported values for this parish.

Table 7. *Summary of Earnings and Food Costs Reported by Respondents*

Variable	**N**	**Mean**	**St. Dev**	**Min**	**Max**
Average annual rent (shillings)	1,181	31.74	12.52	7	100
Average daily wage (d)	1,388	9.02	1.83	4.00	16.00
Daily female wage (d)	1,048	6.00	1.72	1.00	12.00
Daily child wage (d)	831	4.22	1.30	1.00	10.00
Annual earnings (shillings)	1,228	207.5	69.55	45	600
Annual food cost (shillings)	1,167	132.2	53.49	28	400

Source: Author's calculation based on Royal Commission on the Poorer Classes in Ireland, Supplement to Appendix (D.) and Appendix (E.). Annual earnings refer to income from employment, plus any other income received throughout the year. All annual costs are recorded in shillings to aid interpretation.

To further test the accuracy of the estimates, their correlations are presented in Table 8. Reassuringly, there is a positive correlation across all variables. The strongest correlation is found between female wages and child wages. The rest of the correlations are relatively weak.

It does not appear to be a case whereby higher wages are determined by higher food costs. Outside factors are determining the cost of living and wages. Also included are the correlations for when women and children work. There is a strong positive correlation between women and children working, which suggests they may have been complements. There is also a positive correlation between both child and female labour force participation and the average wage earned by men. This would suggest women and children are more likely to work if there are not enough men in the labour force in a parish and act as a supplement to the labour force. A shortage of men in the labour force does not suggest parishes were experiencing overpopulation. This can be further examined in the analysis carried out in Sections 5 and 6.

Table 8. *Correlation of wages and living costs reported in Poor Inquiry Surveys*

	Average wage	Female wage	Child wage	Annual earning	Food	Rent	Women Working	Children Working
Average wage	1.000							
Female wage	0.306	1.000						
Child wage	0.308	0.633	1.000					
Annual earning	0.460	0.221	0.265	1.000				
Food	0.289	0.124	0.096	0.311	1.000			
Rent	0.329	0.226	0.187	0.169	0.183	1.000		
Women Working	0.174	0.821	0.528	0.040	0.018	0.074	1.000	
Children Working	0.222	0.536	0.824	0.083	0.020	0.052	0.603	1.000

Source: Author's calculation based on Royal Commission on the Poorer Classes in Ireland, Supplement to Appendix (D.) and Appendix (E.).

The returns can also be compared with the 1821 and 1831 censuses. Approximately half the parishes can be matched to surviving population data from the censuses. The change between the 1821 and 1831 values can then be compared to the *Poor Inquiry* responses regarding population change to evaluate their accuracy. It is important to note that the population returns of both the 1821 and 1831 censuses are subject to criticism. The 1821 returns are believed to underestimate population while the 1831 returns overestimate it (Connell, 1950). Despite these issues, the returns will still give a strong indication as to whether the

population of a parish had decreases, remained stationary or increased over the course of the decade. Comparing the census returns and the *Poor Inquiry* responses shows them to both follow a broadly similar pattern. A small percentage of parishes experience a decrease in population while the vast majority experience an increase. The perceptions of the *Poor Inquiry* respondents were consistent with official data sources.

Boulier and Goldfard (1998) classify surveys into seven different groups. The *Poor Inquiry* would fall under their category of 'facts of past and present economic life.' Economists regard these surveys as relatively 'high fact' as they require the recounting of facts presumed known by the respondents. The testing which has been carried above has helped to provide reassurance about the reliability and 'high fact' nature of the *Poor Inquiry*. While some individual responses may vary or be inaccurate due to differing interpretations, we can conclude that overall, this historical survey is a reliable source of data. The correlation and consistency of the data with other measures of poverty and wages from the period also provides external validity of the reliability of the data and information reported in the *Poor Inquiry*.

5. Covariates of Poverty Deterioration across Parishes

Now that the credibility of the data has been assessed, the changes in poverty can be examined. This section will test several hypotheses for the causes and indicators of increases in poverty. The first hypothesis is that parishes in which wages are lower or the cost of living are higher will report deterioration due to the higher economic constraints placed on their poor. A similar relationship has been found in studies of rural India whereby higher poverty incidence has been associated with higher relative food prices or lower agricultural wages (Ravallion, 2000).

The second hypothesis is if the make-up of diet can act as an indicator of increasing poverty. Modern surveys have found a common link between diet quality and socio-economic status (Dowler, 2001). While the Irish diet was dominated by the potato, other food sources are

mentioned in the *Poor Inquiry*. This hypothesis will allow me to test if these other sources are related to changes in living conditions.

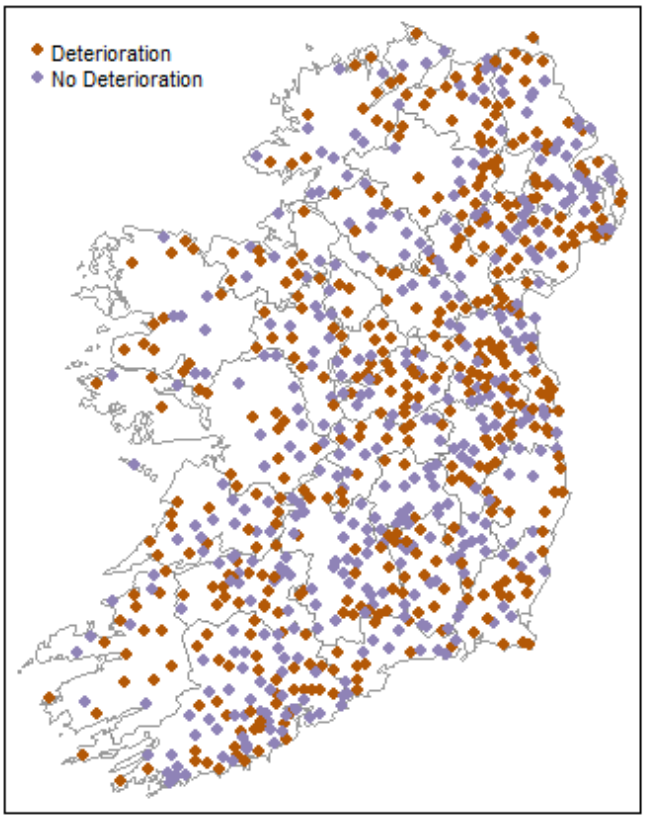
The third hypothesis is that geographical features and the location of parishes plays a role in explaining poverty. This is driven by the idea that Irish poverty may have some underlying causes. Fernihough and Ó Gráda (2018) present evidence that geographical remoteness was associated with illiteracy and the proportion of 4th class housing. Irish poverty therefore may be a result of persistence.

The final hypothesis is that increases in poverty were caused by population pressure. Increasing population could place a strain on the resources of a parish and result in deterioration of conditions. This could be driven by greater demand for resources such as food or housing or greater demand for jobs resulting in higher unemployment or lower wages. There is conflicting evidence as to whether Ireland was overpopulated. The work of Mokyr (1983) argues this not to be the case while more recent work by Fernihough and Ó Gráda (2018) presents evidence of a relationship between population and poverty indicators in Irish parishes. They capture the effects of population using a measure of population pressure, while this paper will capture it using population density and responses from the *Poor Inquiry*.

To test the above hypotheses, linear probability models will be used. The dependent variable will measure changes in poverty, taking the form of the binary variable "deteriorated" or "not deteriorated" to ease interpretation. However, probit and ordered probit models can be found the appendix as robustness checks and confirm that the results which follow are consistent across different specifications of the deterioration variable. Figure 2 maps the binary responses. A few points are worth noting. Firstly, it is evident from the map that reporting "no deterioration" is more common than reporting "deterioration". When Mokyr and Ó Gráda (1988) aggregated the responses to form a county-level Subjective Impoverishment Index, only two of Ireland's 32 counties were recorded as not experiencing deterioration. Conditions at

parish-level were therefore more varied than at county-level. Secondly, no clear spatial pattern is evident, which suggests that the deterioration of conditions in the first half of the nineteenth century was not concentrated in particular areas, but was instead spread across the country.

Figure 2*: Binary Reported Change in Conditions*



The independent variables for the analysis will be based predominantly on returns from the *Poor Inquiry*, with some additional variables from other sources used in the testing of the hypotheses on geography and population pressure. Latitude and longitude will also be included in each specification and standard errors clustered by county to account for any potential spatial forces. Tests of multicollinearity were also carried out after each specification and no evidence of strong multicollinearity was found[4].

[4] A variance inflation factor (VIF) test is run after each regression to measure the strength of the correlation between variables. All values fall at the lower end of the scale, close to one. This suggests multicollinearity is not a cause for concern in any of the models.

The results can be found in Table 9. Column 1 tests the hypothesis that the deterioration was driven by wages and living costs. The results are indicative of poorer parishes becoming poorer. Higher annual earnings, and male and child wages are all correlated with lower probability of reporting deteriorating conditions. The average daily wage has the largest effect.

While column 1 shows the cost of food to have no significant effect, column 2 suggests that the type of food can matter. The different items that can make up the diet of the poor have been regressed on changing conditions. The first notable result is the lack of significant correlation between complete potato dependence and deteriorating conditions. It may be possible however that parishes where the poor were wholly dependent on the potato may have always been poor and so recorded no change in conditions. It must also be noted that while historians blame the potato for the blight of the Irish (Salaman, 1943), for contemporaries the potato was not seen as an indication of poverty but as a source of a healthy, extremely nutritional diet. Had the poor been solely reliant on a different, less nutritious food source, single source dependency may then have acted as an indicator of poverty. Parishes where oatmeal is eaten regularly by the poor see the probability of reporting a deterioration in conditions decrease by 25 per cent. This may indicate an 'Ulster effect'. Oatmeal was more likely to be eaten in Ulster where industrialization had somewhat limited the immiseration of the poor compared to the rest of the island (Connell, 1950).

Column 3 tests the hypothesis that conditions were determined by geography. Proximity to the coast, canals or a road network have no significant effect on reported deterioration. While geographical remoteness has been shown to effect absolute poverty levels in Ireland (Fernihough and Ó Gráda, 2018), there is no evidence found here to suggest that also applies to changes in poverty.

Column 4 looks for evidence of population pressure by studying the correlation between conditions and population variables. Population density is positively correlated with

a deterioration in conditions. However, reporting an increase in population and a stationary population are negatively correlated with worsening conditions. This is not supportive of a Malthusian hypothesis. Compared to parishes which report a decline in population, parishes which report increasing population are 14 per cent less likely to report deteriorating conditions. The correlation coefficient between deterioration and reported parish-level emigration was just 0.05. Changing conditions do not appear to have been a driver of emigration, which may have masked population pressure. This suggests any deterioration in conditions were not a result of population increases which had happened in the previous 20 years. These findings are also consistent with the correlations presented in Table 8 which did not suggest parishes were experiencing overpopulation.

Column 5 reports the specification of all variables from columns 1 to 4. The results remain largely consistent. Male average daily wage continues to have an effect while child wage does not. Across all specifications, there is a significant, positive relationship between latitude and reported deterioration. This suggests the more northern a parish, the greater the probability of reporting deterioration. In the nineteenth century, the northern province of Ulster would have been viewed as a more prosperous part of Ireland (O'Brien, 1921). The positive relationship between latitude and deterioration may be driven by the loss of the linen industry which had been a large component of the Ulster economy (Ó Gráda, 1995). Some of the deterioration may therefore have been driven by more prosperous parishes facing a decline in their economic conditions.

Beyond the robustness checks previously mentioned, the analysis has also been replicated on subsections of the data based on respondent type. These can be found in the appendix. The results remain largely consistent, with only two main differences. When the respondent is from the gentry class, the cost of food becomes insignificant while potato dependence becomes statistically significant. All specifications support the view there was no

correlation between population and changes in poverty. The consistency of the results across these specifications also adds further weight to the credibility of the different respondents.

6. Famine Severity

The previous section has outlined some of the factors which were correlated with increases in pre-famine poverty. The question remains if these factors, along with deterioration itself, made a parish more vulnerable to the effects of the famine and if they explain why the Irish famine was so severe. To answer this, the parish-level population decline between 1841 and 1851 is used as the dependent variable to capture the effect of the famine. The greater the population decrease, the greater the severity of the famine will be judged to be. A positive coefficient will indicate an increase in population and therefore a lower effect of the famine. The decrease in population works via two mechanisms: people dying or people migrating. It is not possible to disentangle the two with the population statistics available. As the dependent variable is now continuous, OLS models are used. Given the range of units the independent variables will be measured in, the coefficients in these models will be standardized and interpreted as the effect of one standard deviation change. Again, latitude and longitude are included in all models to control for spatial forces.

To test the relationship between increasing poverty and famine population loss, the analysis from Table 9 is replicated in Table 10, with famine population change the dependent variable. Beginning in column 1, I measure the effect of parish-level poverty on famine severity. The binary measure of deterioration from the previous regressions is included to control for changes in poverty in the decades prior to the famine. The proportion of 4th class housing in the parish is included to account for absolute levels of poverty on the eve of the famine. Previous research has used this as a measure of poverty in the absence of other sources (Fernihough and Ó Gráda, 2018).

Table 9. *Linear Probability Model of Deterioration*

VARIABLES	(1) Probability of Reporting Deterioration	(2) Probability of Reporting Deterioration	(3) Probability of Reporting Deterioration	(4) Probability of Reporting Deterioration	(5) Probability of Reporting Deterioration
Potato Dependent		0.063			0.023
		(0.057)			(0.059)
Milk in Diet		-0.031			-0.019
		(0.055)			(0.053)
Fish in Diet		0.041			0.025
		(0.036)			(0.040)
Oatmeal in Diet		-0.246***			-0.188***
		(0.030)			(0.027)
Bread in Diet		0.034			0.069
		(0.053)			(0.062)
Eggs in Diet		-0.078			-0.081
		(0.071)			(0.079)
Butter in Diet		-0.179***			-0.111**
		(0.040)			(0.048)
Meat in Diet		-0.138**			-0.112
		(0.060)			(0.067)
Average Daily Wage (log)	-1.141***				-1.102***
	(0.252)				(0.259)
Female Wage (log)	-0.050				-0.065
	(0.057)				(0.069)
Child Wage (log)	-0.128**				-0.087
	(0.050)				(0.059)
Annual Cost of Food (log)	0.171				0.209**
	(0.102)				(0.090)
Annual Earnings (log)	-0.785***				-0.718***
	(0.121)				(0.121)
Rent (log)	0.0818				-0.072
	(0.263)				(0.274)
Distance from Coast			0.001		-0.001
			(0.001)		(0.001)
Distance from Canal			0.002		0.001
			(0.001)		(0.001)
Distance from Road			0.0001		-0.0001
			(0.001)		(0.001)
Population Density				0.524***	0.616***
				(0.159)	(0.144)
Population Increase				-0.143**	-0.120*
				(0.065)	(0.067)
Population Stationary				-0.223**	-0.152*
				(0.086)	(0.083)
Latitude	0.097***	0.119***	0.105***	0.101***	0.123***
	(0.026)	(0.023)	(0.036)	(0.023)	(0.033)
Longitude	0.065*	-0.010	-0.022	-0.056	0.081**
	(0.036)	(0.029)	(0.035)	(0.033)	(0.036)
Observations	1,332	1,338	1,338	1,135	1,131
Respondent Type	All	All	All	All	All
R-squared	0.125	0.099	0.031	0.042	0.191

Note. All variables in columns (1) and (2) are from the returns of the *Poor* Inquiry. The variables in column (3) are calculated using GIS techniques. In column (4) population density is calculated using returns from the 1841 census while the remaining population variables are based on the *Poor Inquiry* returns. Robust standard errors clustered by county are in parentheses *** p<0.01, ** p<0.05, * p<0.1

The findings suggest increasing poverty in the decades leading up to the 1840's did not make a parish more vulnerable to the famine. Reporting conditions to be deteriorating has no statistically significant effect on the famine population change. However, absolute poverty does have an effect. An increase in the proportion of 4th class housing in a parish leads to a larger fall in population. A 16 per cent increase in the proportion of 4th class housing in a parish equates to 2 per cent fall in post-famine population. It is therefore the absolute, not changing, poverty which made some Irish parishes more vulnerable to the effects of the famine than others.

In Column 2, I examine if there is correlation between the cost of living or wages in the decade before the famine and post-famine population. A strong positive correlation is found between average daily wage and famine population change. Female wages also return a positive correlation. Higher pre-famine wages are associated with higher post-famine population. Given that parishes with higher wages were also less likely to have experienced deteriorating conditions, this would suggest parishes which were poorer suffered higher population loss as a result of the famine. Surprisingly rent is positively correlated with post-famine population. However, the magnitude of the effect is extremely small. A one standard deviation increase in pre-famine rent increases post-famine population by 0.1 per cent. While statistically significant, the effect of rent is economically insignificant.

Column 3 gives insight into the relationship between pre-famine diet and famine impact. Interestingly, parishes where the poor were wholly reliant on a potato diet pre-famine are no more or less likely to experience population loss as a result of the famine. Therefore, differences in famine effect *between* parishes was not driven by the loss of the potato. Starvation may not have been the key cause of famine deaths, but more likely disease, as noted by Ó Gráda (1993). However, the results do speak to the effect of having an alternative food source that is exogenous to the effects of the blight. When discussing the Irish Famine, the

question is often asked as to why the population did not turn to other food sources such as fish which were exogenous to the blight to replace the potato. The results of column 2 show that having food other than the potato in your pre-famine diet had no effect. The only food source which does have an effect is fish. However, the magnitude is small and equivalent to saving only 1 per cent of the population. This small effect and the null effect of the other food sources highlights the fact the pre-famine diet of potatoes was extremely high in calories. Even if other food sources were available, the quantity of them required to match the calories the Irish were used to eating would have been practically impossible to reach.

The results in column 4 show some of the most important determinants of famine severity. Both distance from the coast and navigable waterways are negatively correlated with famine impact. For every 23km increase in parish distance from the coast, population falls by an average of 3.6 per cent. Similarly, every 26km from a canal equates to a 1.9 per cent drop. As shown above, this effect is not driven by the water offering an alternative food source. Instead, it may be that waterways still offer some form of trade network. People may have also migrated to areas along the coast and canal in hope of finding alternative food, even though the benefit of doing so was negligible.

Some additional variables have been added to column 4 to further explore the relationship between land related factors and famine impact. They are the land value per acre of a parish, the presence of landlords, if wages were reported as being paid in lieu of rent and if the poor were supported by their holdings when out of employment. These last two variables are based on *Poor Inquiry* returns. The returned relationships for land value and wages being paid in rent are insignificant. However, the other two variables are correlated with famine severity.

Parishes in which the poor were supported by their holdings when out of employment suffer declines in their population compared to parishes where other means of support were

used. This could be caused by two mechanisms. Firstly, being supported by holdings often meant growing extra potatoes to maintain a family when workers were unemployed. With the failure of the potato, this method of support ceased to be an option. The effect may also work through the mechanism of evictions. Over the course of the famine and the following years, over 200,000 people were evicted from their land (Ó Gráda, 1993). If support was provided by holdings as opposed to another method and the failure of the potato meant this was no longer an option, this would have made people more vulnerable to eviction. If a family was evicted, they may then migrate to another parish in seek of relief or may have been left homeless and more susceptible to disease and therefore death.

The vested means variable captures the effect of landowners with over 50 acres of land or those with substantial levels of capital of wealth. A one standard increase in the proportion of these people in a parish increases post-famine population by 1.9 per cent. While not always the case, those with substantial landholdings and wealth may have offered some level of support or assistance to those in the parish. Those with high levels of land and wealth would have also encountered a lower effect of the loss of the potato as they had other means of financial support and would not have been reliant on it for food to the same extent as the poorer classes.

Column 5 tests if population pressures drove famine population loss. Population density is the only measure to have an effect. Densely populated parishes may have been in more urban areas. It would have been common for people to migrate to these areas during the famine in search of both relief and work. This is indicated by the experience of Dublin City where the population rose by 17 per cent during the famine. The results for parishes where population was reported to be increasing or stationary are also consistent with the results in the previous section which were not supportive of Ireland being over-populated. If the famine was a result

of or worsened by population pressure, it was due to population growth which happened in the century before the famine, not the decades prior.

The final step is to study if these relationships persist when the variables are all combined in one model. This is shown in column 6. Fish no longer has an effect, though oatmeal now does. The magnitude is less than 1 per cent so the view that alternative food sources have no effect persists. The results in terms of wages and costs of living remain largely consistent, with rent no longer being significant. The variables relating to land and the physical characteristics of the parish are also overall consistent. There is also no change to the finding that population growth since the end of the Napoleonic Wars did not contribute to the famine. Looking at the results all together, the largest determinants of famine impact appear to be physical attributes, such as costal and navigable waterway distance and latitude and longitude, along with absolute poverty. This may help explain why the experience of the Irish during the famine of 1845 to 1852, and potentially also in the 1740's, was so much worse compared to the experience of other countries during times of famine. The poverty which was synonymous with Ireland made its population more vulnerable to periods of famine compared to those in other countries. There also appear to be underlying, geographic factors which further increased the vulnerability of certain areas within Ireland.

Table 10. *Regression Predicting Famine Population Change*

VARIABLES	(1) Pop. Change	(2) Pop. Change	(3) Pop. Change	(4) Pop. Change	(5) Pop. Change	(6) Pop. Change
Deterioration	-0.028					0.002
	(0.592)					(0.661)
4th Class Housing	-0.151***					-0.109**
	(0.033)					(0.040)
Potato Dependent			-0.022			0.012
			(1.213)			(1.250)
Milk in Diet			-0.029			0.002
			(0.948)			(0.998)
Fish in Diet			0.088***			0.035
			(0.683)			(0.755)
Oatmeal in Diet			0.032			0.055*
			(0.783)			(0.827)
Bread in Diet			-0.003			-0.009
			(1.313)			(1.238)
Eggs in Diet			-0.027			-0.013
			(1.350)			(1.535)
Butter in Diet			-0.003			-0.007
			(1.273)			(1.338)
Meat in Diet			0.009			-0.029
			(1.180)			(1.332)
Average Daily Wage (log)		0.213***				0.090**
		(4.691)				(4.874)
Female Wage (log)		0.072**				0.043
		(1.172)				(1.238)
Child Wage (log)		-0.029				-0.024
		(1.291)				(1.394)
Annual Cost of Food (log)		0.043*				0.058**
		(0.018)				(0.019)
Annual Earnings (log)		0.025				0.004
		(0.021)				(0.024)
Rent (log)		0.051**				0.017
		(0.056)				(0.060)
Distance from Coast				-0.283***		-0.232***
				(0.013)		(0.015)
Distance from Canal				-0.175***		-0.134***
				(0.016)		(0.020)
Distance from Road				-0.002		0.016
				(0.018)		(0.023)
Land Value per Acre				0.023		0.090***
				(0.001)		(0.0001)
Vested Means ‘41				0.186***		0.116***
				(0.017)		(0.277)
Wages paid in Rent				-0.037		-0.026
				(0.982)		(1.013)
Maintained by Holdings				-0.051**		-0.080***
				(0.588)		(0.624)
Population Density					0.163***	0.041
					(4.289)	(4.235)
Population Increase					0.036	0.026
					(1.315)	(1.225)
Population Stationary					0.036	-0.003
					(1.716)	(1.574)
Latitude		0.166***	0.141***	0.132**	0.142***	0.106**
		(0.384)	(0.378)	(0.521)	(0.416)	(0.568)
Longitude		0.250***	0.433***	0.237***	0.414***	0.159***
		(0.458)	(0.389)	(0.591)	(0.396)	(0.733)
Observations		1,314	1,318	1,318	1,098	1,076
R-squared		0.331	0.300	0.401	0.306	0.412

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

7. Conclusion

The findings of this paper build upon existing research to add a new dimension to our understanding of living conditions in nineteenth century Ireland. The *Poor Inquiry* has been used more extensively than in previous research and has resulted in a better understanding of pre-famine conditions and how the immiseration of the Irish poor came to be. By using responses at parish-level as opposed to county-level, it has been identified that less than half of parishes report experiencing deteriorating conditions of the poor. When conditions of the poor do deteriorate, it appears to be largely a result of the poor becoming poorer. This increase in inequality is primarily driven by differences in income between parishes.

The results of this paper also add to the Malthusian debate surrounding Ireland. There has been a long-standing debate between both contemporaries at the time and economic historians as to whether pre-famine Ireland was overpopulated. The writings of Connell (1950) and Galbraith (1979) are both supportive of the Malthusian view. However, Blacker (1846) and Sadler (1829) would argue against this interpretation. The findings of Mokyr (1983) also dispute the idea Ireland was a Malthusian society. The results of this paper are also consistent with this view. Evidence is shown of women and children acting as a supplement to the labour force in some parishes, which points more to a population shortage than an overpopulation. The population measures in both models do not show any evidence of population pressure in the prior decades driving either increases in poverty or decreases in post-famine population. At parish-level, there is therefore no evidence found to support a Malthusian view.

The main finding of this paper is the relationship between per-famine conditions and famine severity. No direct relationship between deteriorating conditions and famine severity is found. However, absolute poverty is found to make a parish more vulnerable to the famine. Therefore, it is levels of, not changes in poverty which are a key pre-famine determinant of famine outcome. The evidence of the strong role played by physical attributes of a parish in

relation to famine impact speaks to there also being an underlying, more structural cause of some parishes suffering more during the famine compared to others. Navigable waterways appear to have offered a safety net against population loss. The long distance between them and some parishes may explain why there was such variation in famine severity. This provides valuable lessons for studies of famine in general. Within a country hit by famine, there can be huge variation in the impact throughout the country. Particular pre-famine conditions and different underlying characteristics make certain areas more susceptible to experience a severe impact due to famine compared to others. The experience of the Irish also offers a warning against heavy reliance on a single food source. A varied diet will offer some form of protection should one food source fail.

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Appendix 1 – Additional Results

Table A1: *Probit Model of Deterioration*

VARIABLES	(1) Probability of Reporting Deterioration	(2) Probability of Reporting Deterioration	(3) Probability of Reporting Deterioration	(4) Probability of Reporting Deterioration	(5) Probability of Reporting Deterioration
Potato Dependent		0.064			0.013
		(0.062)			(0.072)
Milk in Diet		-0.034			-0.028
		(0.059)			(0.062)
Fish in Diet		0.044			0.030
		(0.038)			(0.046)
Oatmeal in Diet		-0.257***			-0.213***
		(0.031)			(0.031)
Bread in Diet		0.038			0.081
		(0.058)			(0.070)
Eggs in Diet		-0.086			-0.103
		(0.080)			(0.102)
Butter in Diet		-0.206***			-0.153**
		(0.047)			(0.067)
Meat in Diet		-0.153**			-0.143*
		(0.068)			(0.085)
Average Daily Wage (log)	-1.320***				-1.366***
	(0.319)				(0.360)
Female Wage (log)	-0.054				-0.075
	(0.062)				(0.080)
Child Wage (log)	-0.141**				-0.097
	(0.055)				(0.067)
Annual Cost of Food (log)	0.200*				0.259**
	(0.114)				(0.102)
Annual Earnings (log)	-0.871***				-0.845***
	(0.139)				(0.137)
Rent (log)	0.083				-0.069
	(0.288)				(0.323)
Distance from Coast			0.001		-0.001
			(0.001)		(0.001)
Distance from Canal			0.002		0.001
			(0.001)		(0.001)
Distance from Road			0.000		-0.000
			(0.001)		(0.001)
Population Density				0.566***	0.735***
				(0.189)	(0.185)
Population Increase				-0.147**	-0.136*
				(0.067)	(0.079)
Population Stationary				-0.230**	-0.187*
				(0.090)	(0.100)
Latitude	0.107***	0.129***	0.107***	0.103***	0.144***
	(0.029)	(0.026)	(0.038)	(0.024)	(0.040)
Longitude	0.074*	-0.013	-0.023	-0.058*	0.097**
	(0.041)	(0.032)	(0.036)	(0.035)	(0.045)
Observations	1,332	1,338	1,338	1,135	1,131
Pseudo R-Squared	0.0962	0.0753	0.0217	0.0314	0.153

Robust standard errors clustered by county are in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A2. *Linear Probability of Deterioration (Religious Respondents)*

VARIABLES	(1) Probability of Reporting Deterioration	(2) Probability of Reporting Deterioration	(3) Probability of Reporting Deterioration	(4) Probability of Reporting Deterioration	(5) Probability of Reporting Deterioration
Potato Dependent		-0.017			-0.055
		(0.092)			(0.081)
Milk in Diet		-0.056			-0.057
		(0.087)			(0.072)
Fish in Diet		0.006			-0.011
		(0.043)			(0.045)
Oatmeal in Diet		-0.248***			-0.196***
		(0.039)			(0.039)
Bread in Diet		-0.044			-0.050
		(0.073)			(0.073)
Eggs in Diet		-0.127			-0.126
		(0.110)			(0.101)
Butter in Diet		-0.212***			-0.145**
		(0.050)			(0.067)
Meat in Diet		-0.088			-0.046
		(0.070)			(0.095)
Average Daily Wage (log)	-1.121***				-1.114***
	(0.338)				(0.356)
Female Wage (log)	-0.053				-0.030
	(0.068)				(0.071)
Child Wage (log)	-0.136**				-0.117*
	(0.058)				(0.068)
Annual Cost of Food (log)	0.174				0.227**
	(0.113)				(0.109)
Annual Earnings (log)	-0.721***				-0.618***
	(0.122)				(0.128)
Rent (log)	-0.042				-0.362
	(0.331)				(0.354)
Distance from Coast			0.001		-0.0002
			(0.001)		(0.001)
Distance from Canal			0.002		0.001
			(0.001)		(0.001)
Distance from Road			0.001		0.0003
			(0.001)		(0.001)
Population Density				0.602***	0.721***
				(0.171)	(0.171)
Population Increase				-0.134*	-0.101
				(0.075)	(0.078)
Population Stationary				-0.173*	-0.094
				(0.095)	(0.092)
Latitude	0.085***	0.098***	0.084**	0.084***	0.096***
	(0.025)	(0.023)	(0.037)	(0.022)	(0.028)
Longitude	0.068*	-0.007	-0.004	-0.044	0.094**
	(0.038)	(0.031)	(0.041)	(0.036)	(0.043)
Observations	924	930	930	788	784
Respondent Type	Religious	Religious	Religious	Religious	Religious
R-squared	0.114	0.086	0.026	0.036	0.182

Robust standard errors clustered by county are in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A3. *Linear Probability of Deterioration (Gentry Respondents)*

VARIABLES	(1) Probability of Reporting Deterioration	(2) Probability of Reporting Deterioration	(3) Probability of Reporting Deterioration	(4) Probability of Reporting Deterioration	(5) Probability of Reporting Deterioration
Potato Dependent		0.169			0.097
		(0.105)			(0.107)
Milk in Diet		0.005			0.026
		(0.070)			(0.072)
Fish in Diet		0.076			0.072
		(0.058)			(0.064)
Oatmeal in Diet		-0.162***			-0.108*
		(0.048)			(0.055)
Bread in Diet		0.152*			0.228**
		(0.078)			(0.095)
Eggs in Diet		0.004			-0.044
		(0.095)			(0.125)
Butter in Diet		-0.108			-0.028
		(0.069)			(0.053)
Meat in Diet		-0.158**			-0.136
		(0.068)			(0.085)
Average Daily Wage (log)	-1.181***				-1.163***
	(0.238)				(0.327)
Female Wage (log)	-0.026				-0.111
	(0.075)				(0.097)
Child Wage (log)	-0.051				-0.020
	(0.089)				(0.096)
Annual Cost of Food (log)	0.136				0.153
	(0.154)				(0.136)
Annual Earnings (log)	-0.615***				-0.755***
	(0.204)				(0.214)
Rent (log)	0.302				0.514
	(0.415)				(0.423)
Distance from Coast			-0.001		-0.002
			(0.001)		(0.001)
Distance from Canal			0.0001		-0.0001
			(0.001)		(0.001)
Distance from Road			-0.001		-0.001
			(0.002)		(0.002)
Population Density				0.462	0.497*
				(0.280)	(0.278)
Population Increase				-0.041	-0.099
				(0.113)	(0.152)
Population Stationary				-0.329***	-0.315*
				(0.115)	(0.159)
Latitude	0.089**	0.121***	0.098**	0.089***	0.128***
	(0.033)	(0.030)	(0.040)	(0.032)	(0.0443)
Longitude	0.038	-0.034	-0.069***	-0.077**	0.035
	(0.040)	(0.031)	(0.025)	(0.035)	(0.036)
Observations	387	387	387	331	331
Respondent Type	Gentry	Gentry	Gentry	Gentry	Gentry
R-squared	0.098	0.078	0.026	0.063	0.189

Robust standard errors clustered by county are in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A4: *Ordered Probit Model of Deterioration*

VARIABLES	(1) Much Deterioration	(2) Deterioration	(3) Stationary	(4) Improved	(5) Much Improved
Potato Dependent	0.038	0.017	-0.014	-0.024	-0.012
	(0.040)	(0.016)	(0.016)	(0.025)	(0.012)
Milk in Diet	-0.001	-0.001	0.001	0.001	0.001
	(0.025)	(0.013)	(0.009)	(0.017)	(0.009)
Fish in Diet	-0.007	-0.004	0.002	0.005	0.003
	(0.019)	(0.010)	(0.007)	(0.013)	(0.007)
Oatmeal in Diet	-0.076***	-0.046***	0.023***	0.055***	0.032***
	(0.019)	(0.014)	(0.006)	(0.015)	(0.010)
Bread in Diet	0.040	0.017	-0.016	-0.025	-0.013
	(0.039)	(0.013)	(0.016)	(0.023)	(0.020)
Eggs in Diet	-0.059*	-0.039	0.017**	0.045	0.027
	(0.033)	(0.028)	(0.007)	(0.277)	(0.019)
Butter in Diet	-0.039	-0.021	0.011	0.026	0.015
	(0.030)	(0.022)	(0.009)	(0.024)	(0.015)
Meat in Diet	-0.062**	-0.042	0.017*	0.048*	0.030*
	(0.030)	(0.026)	(0.006)	(0.026)	(0.017)
Average Daily Wage (log)	-0.357**	-0.182***	0.128**	0.242**	0.129**
	(0.140)	(0.070)	(0.056)	(0.097)	(0.046)
Female Wage (log)	-0.051	-0.026	0.018	0.034	0.018
	(0.037)	(0.020)	(0.013)	(0.026)	(0.013)
Child Wage (log)	-0.015	-0.008	0.005	0.010	0.006
	(0.035)	(0.018)	(0.013)	(0.023)	(0.013)
Annual Cost of Food (log)	0.106**	0.054**	-0.038**	-0.072**	-0.038**
	(0.050)	(0.024)	(0.018)	(0.031)	(0.019)
Annual Earnings (log)	-0.502***	-0.256***	0.179***	0.339***	0.180***
	(0.061)	(0.041)	(0.024)	(0.043)	(0.035)
Rent (log)	-0.111	-0.057	0.040	0.075	0.040
	(0.189)	(0.098)	(0.068)	(0.128)	(0.069)
Distance from Coast	-0.0001	-0.00003	0.00002	0.0001	0.00002
	(0.0004)	(0.0002)	(0.0001)	(0.0003)	(0.0001)
Distance from Canal	0.001	0.0004	-0.0003	-0.001	-0.0003
	(0.001)	(0.0003)	(0.0003)	(0.001)	(0.0002)
Distance from Road	-0.0002	-0.0001	0.0001	0.0001	0.0001
	(0.001)	(0.0003)	(0.0002)	(0.0004)	(0.0002)
Population Density	0.468***	0.238***	-0.167***	-0.316***	-0.168***
	(0.078)	(0.039)	(0.031)	(0.051)	(0.031)
Population Increase	0.008	0.004	-0.003	-0.006	-0.003
	(0.049)	(0.027)	(0.017)	(0.035)	(0.019)
Population Stationary	0.028	0.014	-0.010	-0.019	-0.010
	(0.053)	(0.028)	(0.019)	(0.036)	(0.020)
Latitude	0.069***	0.035***	-0.025***	-0.047***	-0.025***
	(0.020)	(0.010)	(0.008)	(0.014)	(0.008)
Longitude	0.033*	0.017	-0.012*	-0.022*	-0.012**
	(0.017)	(0.009)	(0.007)	(0.011)	(0.006)
Observations	1,093	1,093	1,093	1,093	1,093
Pseudo R-Squared					

Robust standard errors are in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Appendix 2 – The *Poor Inquiry*

This appendix outlines the questions selected from the *Poor Inquiry* and how they were recorded for this research. An extensive number of responses were used which had to be converted to a form which would make them comparable and suitable for analysis.

Each return contained the name and county of the parish, along with the population as recorded in 1831 and the name of the respondent. From this, it was possible to record if the respondent was from the clergy or gentry. In some cases, it is possible to note what religion the clergy are from.

Poor Inquiry Questions

"Q1. How many labourers are in your parish? How many in constant? How many in occasional employment?"

Where available, these responses were recorded. However, for a large proportion this information either wasn't available or wasn't returned in a consistent format. 687 parishes returned information on the number of labourers. The average number was 576. The average number of constant labourers was 236. The average number in occasional employment was 290.

"Q2. How are they maintained when out of employment?"

Based on the responses returned, a list of potential means of maintenance was created. Each parish was then coded based on whether or not each method was used. The means of maintenance are outlined below. As can be seen, holdings were the most frequent means of support.

Table A5*: Means of Support when Unemployed*

Method	**Parishes where used (%)**
Holdings (i.e. produce of their garden/land)	56
Savings	13
Credit	7
Fishing	2
Charity	5
Begging	10
Theft	1
Support from neighbours/family	4
Migration	1
Weaving	5

"Q3. What is the ordinary diet and condition with respect to clothing of the labouring classes in your parish?"

This question was split in two to examine diet and clothing separately. As with Q2, a list of potential food stuffs was devised and then each parish coded accordingly. Based on the returns, an additional variable was calculated which recorded when a parish listed the potato as the only food stuff eaten by the poor on a daily basis. This became the variable 'monoculture'.

Table A6*: Daily Diet*

Food Stuffs	**Parishes where eaten (%)**
Potatoes	100
Milk	69
Fish	33
Oatmeal	26
Bread	5
Eggs	5
Butter	6
Meat	5
Monoculture	18

Clothing was split into 5 categories based on the responses. They ranged from 'very bad', whereby the poor in the parishes where in a state of near nakedness, to 'good'. The levels are outlined below. Forty per cent of parishes record their poor as having clothing ranked 'bad' or 'very bad'.

Table A7*: Condition of Clothing*

Clothing Condition	**Percent (%)**
Good	21
Average	14
Poor	18
Bad	23
Very Bad	17

"Q4. What are the daily wages of the labourers (specify winter and summer) in your parish?"

Both winter and summer and daily wages were recorded. In the small number of cases where respondents returned annual wages, daily wage was calculated based on the assumption of 200 working days in the year. This was the figure referenced in a number of returns. When both daily wage with and without diet was provided, the without diet wages were used. An additional wage variable was created using the average of the summer and winter wage.

Table A8*: Daily Wage*

Variable	**Mean**	**St. Dev**	**Min**	**Max**
Daily Winter Wage (d)	8.32	1.94	4.00	16.00
Daily Summer Wage (d)	9.72	1.90	4.00	16.00
Average Daily Wage (d)	9.02	1.83	4.00	16.00

"Q5. At what points of the year are they least employed?"

This question recorded when labourers were most often out of employment. The predominant periods were summer and winter, however spring also featured in some cases.

Table A9*: Common Period of Unemployment*

Period of Unemployment	**Percent (%)**
Spring	2
Summer	31
Winter	99

"Q6. Are women and children usually employed in labour, and at what rate of wage?"

For the data, this question was split into four parts; women working, wage for women, children working and wage for children. A higher percentage of parishes record women working than children working.

Table A10*: Women and Children Employed*

Working	**Percent (%)**
Women	80
Children	65

Table A11*: Average Wage of Women and Children*

Variable	**Mean**	**St. Dev**	**Min**	**Max**
Daily Female Wage (d)	6.00	1.72	1.00	12.00
Daily Child Wage (d)	4.22	1.30	1.00	10.00

"Q8. What on the whole might an average *labourer, obtaining an* average *amount of employment earn in the year, including harvest-work and the value of all his other advantages and means of living?"*

This question examined all possible earnings for a labourer in a year. For ease of interpretation of the results, all the recorded responses have been converted to shillings.

Table A12*: Average Annual Earnings*

Variable	**Mean**	**St. Dev**	**Min**	**Max**
Annual Earnings (shillings)	207.5	69.55	45	600

"Q10. What would be the yearly expense of food for an able-bodied labourer in full work, at the average price of provisions, during each of the last three years?"

The same method was used in recording responses to this question as was used for Q8. The majority of respondents only returned one price for the three year period. In cases where multiple prices were returned, the average was used.

Table A13*: Average Annual Cost of Food*

Variable	**Mean**	**St. Dev**	**Min**	**Max**
Annual Food Cost (shillings)	132.2	53.49	28	400

"Q11. Are the wages for labour usually paid in money, or provisions, or by con acres? Or in what other way?"

This question was concerned with the different ways in which wages were paid. When workers were paid in provisions, this could be in the form of food, fuel or clothing. Con acre refers to the letting of a portion of land to be used for either crops or grazing. This was a popular practice in pre-famine Ireland. The only additional payment method mentioned beyond those listed was wages being paid in the form of the rent of a cabin.

Table A14*: Payment of Wages*

Payment Method	**Percent (%)**
Money	83
Provisions	52
Con acre	49
Rent	11

"Q14. What is the usual rent of cabins with, and cabins without, land?"

Like previously, the returns for this question were all recorded in shillings to aid interpretation. Unfortunately, what constituted land was not specified in the question. There is no consistent quantity of land used throughout the responses and so it is not possible to know if the variation is driven by different prices or by different quantities of land.

Table A15*: Average Annual Rent*

Variable	**Mean**	**St. Dev**	**Min**	**Max**
Average Annual Rent (shillings)	31.74	12.52	7	100
Average Annual Rent with Land (shillings)	59.00	34.70	20	800

"Q18. Is the general condition of the poorer classes in your parish, improved, deteriorated, or stationary, since the Peace, in the year 1815? Is the population of the parish increasing or diminishing?"

When recording the responses, conditions and population change were looked at separately. Based on the responses, conditions were coded over 5 levels, ranging from 'much deteriorated' to 'much improved.' To deal with any potential subjectivity concerns, the responses are also then recorded in a separate binary variable.

Table A16*: Reported Conditions*

Conditions	**Percent (%)**
Much Deteriorated	21
Deteriorated	27
Stationary	24
Improved	17
Much Improved	7

In terms of the population portion of the question, the responses were used to record population as either 'increasing', 'decreasing' or remaining 'stationary'.

Table A17*: Reported Population Change*

Population	**Percent (%)**
Increasing	74
Stationary	7
Decreasing	3

"Q30. What numbers of emigrants, and of what description, have left your parish during each of the last three years?"

For this question, only the number of emigrants was used, not their description. The majority of respondents reported the average number of emigrants over each of the previous three years. Where a total number of emigrants was reported, an average was calculated. The average annual emigration rate per 1,000 was then also calculated. A large proportion of surveys had incomplete or missing responses to this question.

Table A18*: Reported Emigration*

Variable	**Mean**	**St. Dev**	**Min**	**Max**
Average Annual Emigration	22.91	39.98	0	500
Average Annual Emigration Rate (per 1,000)	392.22	217.82	1	578

Table A19*: Variable Definitions*

Variable	Definition	Source
Annual Cost of Food	The amount spent on food in a year	*Poor Inquiry*
Annual Earnings	The wage plus additional earnings on average in a year	*Poor Inquiry*
Average Annual Rent	Average annual rate of rent for a cabin (sometimes including a small garden plot)	*Poor Inquiry*
Average Daily Wage	The average of the daily winter and summer daily wage	*Poor Inquiry*
Bread in Diet	Denotes if bread is consumed on a regular basis by the poor in a parish	*Poor Inquiry*
Canal Distance	The shortest distance between the parish and a point along Ireland's canal network	GIS
Children in Work	Denotes if children in a parish work on a regular basis	*Poor Inquiry*
Clothing Quality	Denotes the clothing of the poorer classes in a parish to be of very bad (nakedness or near nakedness), bad, poor, average or good quality	*Poor Inquiry*
Coastal Distance	The shortest distance between the parish and a point on the coast of Ireland	GIS
Daily Child Wage	The average daily wage paid to a child worker. This generally constituted a form of agricultural labour or working for a household	*Poor Inquiry*
Daily Female Wage	The average daily wage paid to a female worker. This generally constituted a form of agricultural labour, spinning or working as a servant	*Poor Inquiry*
Daily Summer Wage	The average daily wage paid to a labourer during the summer months, not including diet	*Poor Inquiry*
Daily Winter Wage	The average daily wage paid to a labourer during the winter months, not including diet	*Poor Inquiry*
Eggs in Diet	Denotes if eggs are consumed on a regular basis by the poor in a parish	*Poor Inquiry*
Emigration Rate	The average number of people per 1,000 in a parish which had migrated in each of the last three years	*Poor Inquiry*

Famine Impact	The impact of the famine on a parish's population, measured by the percentage population change between the 1841 and 1851 census population returns	*1841 and 1851 Census*
Fish in Diet	Denotes if fish is consumed on a regular basis by the poor in a parish	*Poor Inquiry*
Land Value	Based upon the Poor Law valuation of 1838. This was a measure of the fertility of land and buildings within a parish	*Poor Law Valuation*
Latitude	The latitude of the parish	Google Maps
Longitude	The longitude of the parish	Google Maps
Maintained by Begging	Denotes if the poor in a parish are maintained by weaving during periods of unemployment	*Poor Inquiry*
Maintained by Charity	Denotes if the poor in a parish are maintained by charity during periods of unemployment	*Poor Inquiry*
Maintained by Credit	Denotes if the poor in a parish are maintained by using credit during periods of unemployment	*Poor Inquiry*
Maintained by Fishing	Denotes if the poor in a parish are maintained by fishing during periods of unemployment	*Poor Inquiry*
Maintained by Holdings	Denotes if the poor in a parish are maintained by their holdings, generally potato stocks, during periods of unemployment	*Poor Inquiry*
Maintained by Migration	Denotes if the poor in a parish are maintained by migrating for work during periods of unemployment	*Poor Inquiry*
Maintained by Neighbours	Denotes if the poor in a parish are maintained by their neighbours during periods of unemployment	*Poor Inquiry*
Maintained by Savings	Denotes if the poor in a parish are maintained by their savings during periods of unemployment	*Poor Inquiry*
Maintained by Theft	Denotes if the poor in a parish are maintained by stealing during periods of unemployment	*Poor Inquiry*
Meat in Diet	Denotes if meat is consumed on a regular basis by the poor in a parish	*Poor Inquiry*

Milk in Diet	Denotes if milk is consumed on a regular basis by the poor in a parish	*Poor Inquiry*
Monoculture	Denotes a parish where the poor are reliant on a single food source, in this case the potato, on a daily basis	*Poor Inquiry*
Oatmeal in Diet	Denotes if oatmeal is consumed on a regular basis by the poor in a parish	*Poor Inquiry*
Population	The official recorded population of the parish	*Poor Inquiry*
Population Density	The population of the parish divided by the parish's area in square kilometres	*1841 Census*
Proportion of 4th Class Housing	The proportion of houses in a parish classed as "mud cabins having only one room"	*1841 Census*
Reported Population Change	Denotes if respondents to the Poor Inquiry recorded their parish's population as having increased, decreased or remained stationary since 1815	*Poor Inquiry*
Road Distance	The shortest distance between the parish and a point along Ireland's road network as detailed by William Petty	GIS
Spring Unemployment	Denotes spring to be a period of high unemployment in the parish	*Poor Inquiry*
Summer Unemployment	Denotes summer to be a period of high unemployment in the parish	*Poor Inquiry*
Vested Means	Measures the proportion of landowners with over 50 acres of land or those with substantial capital or wealth	*1841 Census*
Wages paid in cash	Denotes wages paid at least partly in the form of a monetary payment	*Poor Inquiry*
Wages paid in con acre	Denotes wages paid at least partly using the con acre system	*Poor Inquiry*
Wages paid in provisions	Denotes wages paid at least partly in the form of provisions, usually in the form of food	*Poor Inquiry*
Wages paid in rent	Denotes wages paid at least partly in the form of rent of a cabin or a patch of land	*Poor Inquiry*
Winter Unemployment	Denotes winter to be a period of high unemployment in the parish	*Poor Inquiry*
Women in Work	Denotes if women in a parish work on a regular basis	*Poor Inquiry*