

Who Donates to Revolutionaries? Evidence from Post-1916 Ireland

Enda Patrick Hargaden*

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Abstract

This paper analyzes the determinants of providing financial support to revolutionaries, using a hand-compiled dataset of 17,000 donations to the Irish National Aid Association after the Easter Rising of 1916. Financial support is best predicted by literacy, marital status, religious affiliation, and relatively high socio-economic status. In this sense, donations to revolutionaries share some characteristics of a luxury good. I find evidence that long-run historical grievances (the Great Famine) also predict support.

Keywords : Philanthropy; state formation; political economy; Irish history.

JEL Classification : D64; H41; N34; P16.

*University of Tennessee, Knoxville. 702 Stokely Management Center, 916 Volunteer Blvd, Knoxville, TN 37996. Email: enda@utk.edu. Excellent research assistance was provided by Cora Bennett, Eunsik Chang, Morgan Elliott, Alannah Shute, and Adrienne Sudbury. Alan Fernihough and Tim Kuhn were extremely generous in assisting with geocoding the data. I thank Robin Adams, Alan de Bromhead, Matt Harris, Larry Kessler, Will Murphy, Marianne Wanamaker, and three anonymous referees for helpful comments.

1 Introduction

This paper studies who donates money to revolutionary causes. The specific institutional setting is Ireland in the early twentieth century, and I analyze a novel dataset of 17,000 donations to the *Irish National Aid Association* (INAA) to shed light on this question.

The INAA, founded in 1916 and closed in 1919, collected money for men who took up arms against the British government. Ireland, at the time still part of the United Kingdom, experienced an unsuccessful republican rebellion, the “Easter Rising”, in 1916. The leaders were executed and thousands of rank-and-file imprisoned, leaving their families at risk of destitution. The founding mission of the INAA¹ was to provide support for those who had fought in the Rising. The INAA publicly solicited donations for the rebels and their families, and this paper contributes to the study of philanthropy through its focus on this unique organization/recipient body. I analyze the social, political, economic, and historical determinants of donations to the INAA.

By today’s standards, the INAA’s name and objectives may seem benign. However, forming an association with “Irish Nation” explicitly in the name was at the time a somewhat controversial proposition. Forming this group immediately after the rebellion, to financially support those who took up arms against the United Kingdom, was bordering on subversive. Interested readers should see Appendix A for a fuller historical background, but suffice it to note that the organization’s political allegiances were clear: the INAA boasted that its leadership included immediate family members of the orchestrators of the rebellion. Firmly associated with radical separatism at a time of substantial restrictions on political activity, it was only the INAA’s “dubious façade as a non-political humanitarian body” (Murphy, 2014) that permitted it to remain legal.

This legality, relative to other avenues towards supporting independence, meant detailed records could be kept and even advertised to solicit further contributions. Each week the INAA published a list of recent donors, and it is the digitization of these records that is the data source analyzed in this article. Who were these donors? Were they rich or poor, male or female, skilled professionals or agricultural labourers, and were their communities uniform or politically divided?

In Appendix B, I provide full details on the data source and digitization/transcription process. Many observations include the names and addresses of contributors, while others (e.g. “INAA Templemore Branch”) can be geolocated to a village/town, if not quite linked to one individual. I thus first use aggregate donations, regressing the determinants of giving on local characteristics based on either Parliamentary constituency ($n = 100$) or barony ($n = 331$) level. We can learn lessons from both geographic levels: while the large number of baronies increases statistical power, the constituency boundaries had been designed to ensure comparability across units. In any case, the inferences from these two specifications are substantively the same, and indeed both traditional regression-based techniques and more modern machine learning techniques (Lasso, random forest) lead to broadly consistent conclusions. Financial support is best predicted by higher literacy, marital status, religious affiliation, and relatively high socio-economic status. Donations are more likely to come from white-collar workers

¹The donations were to both the INAA and the related Volunteers Dependents’ Fund (VDF). The two groups started independently but subsequently merged, and I use ‘INAA’ for short-hand.

than unskilled workers, and farmers give more than agricultural laborers. In this sense, donations have some characteristics of a luxury good. I also find evidence that long-run historical grievances (the Great Famine) are associated with greater support: holding other socio-economic variables constant, per capita donations were higher in areas with larger population declines in the 1840s.

As many observations do indeed list the names and addresses of donors, I supplement the aggregate analyses with linked donor-Census data for all donors from two counties. The micro-level results cohere with the aggregate-level analyses. Relative to their neighbours, confirmed donors are more likely to be literate, Catholic, married, and have relatively high SES, e.g. white-collar or farmer rather than blue-collar or agricultural worker. Donors are also older on average, and more likely to speak the Irish language.

The complex intertwined histories of Britain and Ireland restrict our ability to make broad statements about external validity. Nonetheless, the results in this paper do speak to a larger question. Armed insurgencies are common across the world and will likely continue to be a pressing policy issue (Byman et al., 2001). While understanding the funding-side of revolutionary organizations is of relevance to policymakers, much of the academic focus has been on combatants themselves. For example, Krueger (2007) famously analyzes the characteristics of individual participants of terrorism, and concludes that terrorists tended to be from relatively well-off backgrounds. Paxson (2002) questions the applicability of these findings to the Irish context using local data. Consistent with Paxson’s findings, Narciso and Severgnini (2016) conclude that professional classes were significantly less likely to join the IRA during the Irish revolutionary period.

Rather than focusing on the combatants themselves, the main subjects of this paper are, as noted above, the *other* side of the transaction — the people who voluntarily contributed financial support. A large empirical literature investigates the determinants of philanthropy, though typically to a uncontroversial organization like a local hospital (Smith et al., 1995) or a poverty-alleviation charity (Duquette and Hargaden, 2021). The findings of this paper are best considered in the context of that literature, albeit with a broader definition of philanthropy and an unusual twist in terms of recipient organization. This paper presents, to the best of my knowledge, the first large-scale statistical analysis of a revolutionary organization’s financial records.²

While the focus of this paper is on the “demand side” of who donated money, the “supply side” provides important context and warrants some discussion. The INAA was successful in its mission, raising £138,000 (the equivalent of about €9 million today) before its closure. With 2,000 or so people imprisoned for their part in the Rising, an even distribution of funds would give each approximately £70. For scale, annual output per capita was about £30 at the time. Consequently, as one first-hand observer giving evidence to Ireland’s Bureau of Military History put it, “hundreds of future revolutionaries were thereby subsidized.” Many of the subsidized rebels renewed the fight in Ireland’s War of Independence 1919–1921. Thus, in addition to contributing to the economics of philanthropy, this paper’s analysis of the INAA helps to understand Ireland’s history more broadly.

²Adams (2018) presents related work: a doctoral dissertation on loan subscriptions to the nascent Irish Republic *after* the government’s election.

2 Background

2.1 A Simple Model of Donations

The economics of philanthropy, and the decision to voluntarily contribute to a public good, are active research areas and interested readers should see Andreoni (2006) or Andreoni and Payne (2013) for an overview. The purpose of this section is to provide a model to understand the donation decision, which helps to underpin the subsequent empirical analysis.

Consider a warm-glow model of philanthropy (Andreoni, 1990; Harbaugh, 1998; Becker, 1974) featuring an individual choosing between consumption x_i and donation level d_i , such that $U_i = x_i + f(d_i)$. The intuition is that while philanthropy/voluntary contributions to a public good do not provide direct consumption benefits, the individual does benefit from the ‘warm glow’ feeling induced by donating. The warm glow function f is typically assumed to be strictly concave and to satisfy Inada conditions, though its exact form can vary across individuals. When subject to a budget constraint, the individual optimizes by equating the ratio of the marginal utilities (which is simply $1/f'(d_i)$ in this model) with the ratio of relative prices. It is thus the individual’s marginal utility from d_i — the ‘warm glow’ she receives from donating — that defines her level of contribution and the marginal rate of substitution.

We can imagine that this marginal rate of substitution differs across individuals. Perhaps religiosity or political affiliation affect the willingness to donate, for example. These differences can be estimated empirically and indeed a significant literature estimates what determines philanthropy, e.g. Duquette (2018); Li et al. (2011). It is in this vein that this paper contributes, albeit with its idiosyncratic focus on who donates to revolutionaries.

2.2 An Overview of the Data

While its aims were controversial and its executives’ true intentions debatable, the INAA was officially a philanthropic organization. It was in the business of soliciting donations, and rewarded donors by publicly thanking them in newspaper listings. A copy of these “donor rolls” are kept in storage by the government of Ireland, and I thank the National Library of Ireland for kindly facilitating my access to the manuscripts. Through digitization of these records, I created a dataset of donations to the INAA. In total, I scanned and transcribed the geographic location and monetary value of 17,000 donations to the INAA between 1916 and 1918.

Figure 1 depicts two examples of the primary source. These scans, originally published in June 1916, show a sample of the donations collected in the weeks immediately after the Rising. The panel on the left depicts the larger donations. These donations were quite substantial, with £150 at the top, dropping to £5 towards the bottom. The panel on the right shows a sample of the smaller donations, collected in Templemore in Co. Tipperary, which range from £1 to 5 shillings. As donations continued to arrive, these rolls were published at regular intervals from 1916 until the INAA closed in 1919.

A note on currency may be helpful. Donations are recorded in pounds, shillings, and pence: 12 pence equalled one shilling, and 20 shillings equalled one pound. Exact figures for Irish GDP for the period do not exist, but a useful benchmark is to think of 5 shillings as one or two day’s pay. Both

Figure 1: Examples of the donor rolls that form the basis of the dataset

	£	s.	d.
Cumann-na-mBan Executive	150	0	0
Mrs. Clement Shorter, London	50	0	0
Sympathiser, per Fred. Allan	50	0	0
Alderman P. W. Corrigan, Dublin ..	50	0	0
Most Rev. Dr. McKenna, Bishop of Clogher	25	0	0
John Gore, Solicitor, Dublin	25	0	0
Ed. Eyre, 1 Belgrave Place, Lon- don, S.W.	25	0	0
Claude Chevasse, South Frederick street, Dublin	25	0	0
John Sweetman, Drumbara, Kells	20	0	0
Miss Agnes O'Farrelly, M.A., 26 Highfield road	20	0	0
"Foghan"	20	0	0
Alderman Laurence O'Neill, Dublin ..	10	0	0
P. J. McCall, 25 Patrick street, Dublin	10	0	0
T. J. Nolan, 2 Clare road, Drum- condra	10	0	0
"Sympathisers in Oidcastle"	10	0	0
John Whelan, Shrewsbury Rd., Dublin ..	10	0	0
Dr. D. P. MacEuri, M.A., Galway ...	10	0	0
Mrs. Culhane, Temple Rd., Dublin ...	10	0	0
Sympathisers, per Rev. T. Burbage, B.D., Carlow	8	1	0
"Callini" per Miss Gavan Duffy	5	5	0
Most Rev. Dr. Brownrigg, Bishop of Ossory	5	5	0
Surgeon M'Arde, Merrion Square, Dublin	5	5	0
Jas. O'Brien, 24 Castle St., Nenagh...	5	5	0
Sir P. Shortall, T.C., Dublin	5	5	0
P. S. O'Grain, Blessington	5	5	0
G. Murphy, Athboy	5	5	0
Wm. O'Brien, M.P., Belleville, Mallow ..	5	5	0
Clement Shorter, London	5	5	0
Dr. Mat Russell, Dublin	5	5	0
Dr. Loran Sherlock, T.C., Dublin	5	5	0

Templemore Branch, I.N.A.A.:-	
£1 each—The Rev Mother, Tem- plemore Convent; Ed. Mullally, R. Meagher, W. O'Connell, C.U.C.; A. Regan, T. Maher, U.C.; John Cavanagh, U.C.; T. Morkan, J. Casey, W. Delany, W. Casey, P. Oostigan, J. Fitzgerald, U.C.; Fogarty Brothers, J. Maher, J. Walsh, U.C.; Templemore Division, A.O.H.	
10/- each—Rev. W. O'Dwyer, C.C.; Rev. J. Hennessy, C.C.; G. Williams, P. Maher, J. Kelly, J. Ormond, Miss B. Dunne, J. Collier, D. Flynn, P. Hennessy, T. Hickey, J. Mahony, V.S.; M. Keogh, M. Lanigan, F. O'Neill, Mrs. Mackey, T. Dwan, Ed. Barry, U.C.; J. Egan, U.C.	
7/6 each—T. Coughlin, P. Newc.	
5/- each—J. Shortt, P. Maher, Mrs. Scarsion, T. Mulally, W. Ryan, P. Pratt, T. Henely, J. Ferns, M. O'Sullivan, W. Conan, M. Dwyer, Ed. Gray, P. Russell, J. Kennedy, U.C.; Miss Ryan, P. O'Riordan, T. Cahill, Mrs. M'Grath, W. O'Don- nell, U.C.; P. Murphy, A. Toohy, J. Maher, U.C.; T. Kelly, M. O'Riord- dan, W. Kennedy, J. Gleeson, T. Russell, P. Maher, N. Tierney, Ed. Kevin, S. Maher, J. Kelleher, E. Beery, J. Bannon, D. H. O'Brien, M. Keene, J. O'Meara, "I. C." P. J. A. Maher, M. Maher, U.C.; J. Bourke:	
Smaller sums	£11 19 0
Total	49 9 0

Cullen (2010) and O'Rourke (1998) estimate that Irish GDP was approximately £150 million in 1911, with Andersson and Lennard (2019) concluding it was closer to £120 million. While these estimates differ by 20 percent they both imply per capita GDP in the region of £30 per annum, or, very broadly, 10 or 20 shillings per week. While imprecise and of course varying across occupational class — and noting that prices and wages adjusted during the Great War — the figure of 5 shillings being a day or two's pay is the right order of magnitude.

Not all listing could be geolocated and analyzed in Section 3 below. The focus of the transcription was on listings (e.g. "John Gore, Solicitor, Dublin" and "INAA Templemore Branch") that could be geolocated within Ireland. Consider the very first listings in Figure 1. The £150 donation came from the Executive of *Cumann na mBan* – a nationwide organization, not lending itself to a single location. The second listing, a donation of £50 from London, was evidently from England. An analysis of overseas donations, which comprise the majority of donations and includes over £60,000 from North America, is left for future work.

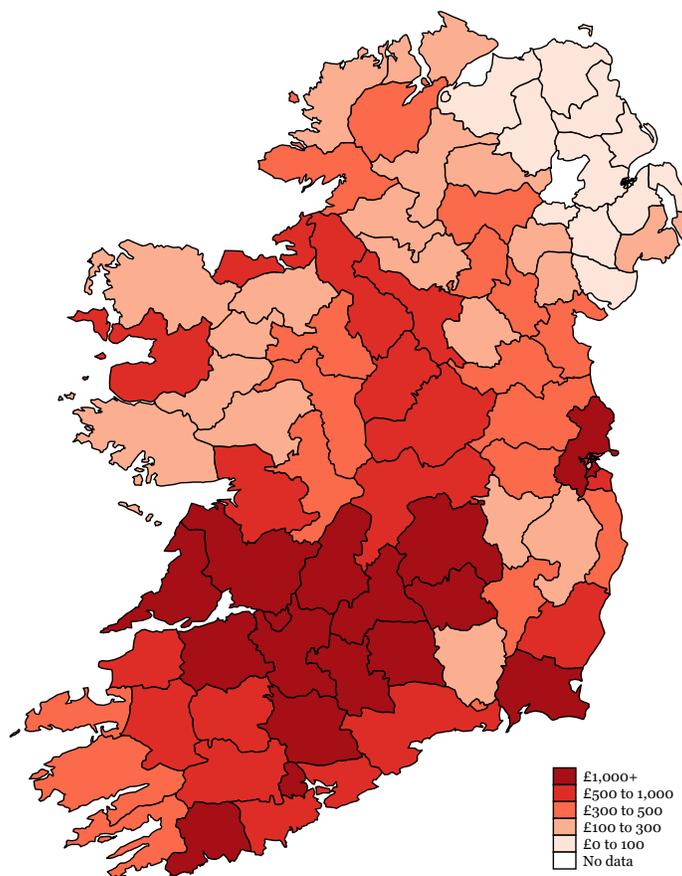
The geolocated data on donations, when scaled by population, constitute the main dependent variable studied in this paper. In total, the amount successfully geolocated to within Ireland was £36,000. The local area population statistics are calculated from the 1911 Census.³ Indeed, in combining the geolocated donations with details from 1911 Census (average ages, land values, etc.), we have a reliable selection of independent variables to better understand the determinants of donating. The empirical analysis of these data is in Section 3.

³These Census data have been used in other papers, cf. Narciso and Severgnini (2016) and De Bromhead et al. (2020). I am indebted to Alan Fernihough for generating the barony-level statistics used in this paper.

3 Empirical Analysis

The principal research question of this paper is who donated to the INAA. We will move to a thorough econometric analysis later, but we start with a graphical representation of the donations in Figure 2. The boundaries represent the one-hundred political constituencies for the 1918 Election. These boundaries were designed so that each constituency had a relatively equal level of representation, and thus every unit is relatively similar/comparable in terms of population.

Figure 2: Heatmap depicting the geographic distribution of donations



One feature of Figure 2 is that donations were noticeably larger in the south than in the north of the island. This low level of support in the north-east is suggestive that political persuasions were at play: donations were negligible in the 'loyal' areas that would in later years remain in the United Kingdom and become Northern Ireland. Support for republicanism was by definition lower in unionist areas, and the paucity of donations from the North provides an initial indication that donating was a politically charged act. There also appears to be an economic gradient, with donations lower along the western seaboard than in the relatively richer inland areas, although this is less striking than the north-south divide and more formal statistical analysis is needed for confirmation.

To start the analysis, I regress per capita donations on a suite of explanatory variables. It is not obvious whether unskilled workers or relatively wealthier white-collar workers are more likely to

donate to revolutionaries. Consequently I initially take a statistically inclusive approach, and run OLS on a relatively large number (17) of variables. It is more intuitive to group the seventeen explanatory variables into categories rather than as a single long list. I classify the explanatory variables under two headings. The “Personal/socio-economic” category is standard and relatively self-explanatory. This category includes religion, literacy, household characteristics, and a suite of occupational shares to capture the economic circumstances of the area. As it is not clear how e.g. age or household size affects revolutionary sentiment, I do not have a prior theoretical prediction on the sign of any of these variables.

I incorporate the second category, “Historical/political variables”, because of the nature of the recipient organization. The inclusion of these variables constitutes a somewhat unusual contribution to the philanthropy literature, and the variables require explanation. The first variable is the Deported (1916) share, which is a population-adjusted count of how many local people were interned and deported in May and June 1916.⁴ Crowley et al. (2017) reports that 2,486 people were deported after the Rising, and it these people the INAA collected money for. To the extent that the salience of the deportations and the possibility of personally knowing a rebel increases donations, we expect a positive relationship between Deported share and donations.

To capture long-run sentiment, I include a variable measuring population change between 1841 and 1851. The Great Famine in the 1840s had a devastating effect on Ireland, with approximately one million people dying and a further one million emigrating. The relatively laissez-faire response of London to the Famine was regularly held up by republicans as an argument for self-government (Lee, 1989).⁵ If long-run sentiment affects donations, we expect a negative relationship between Famine era-population change and donations.

The third and fourth variables in this category, the number of Gaelic League branches and the Irish speaker share, are used as soft measures of non-violent, pro-independence sentiment. The objective of the Gaelic League was the revival of Irish culture and its membership had considerable overlap with the Irish Volunteers who had fought in the rebellion, and the League had been quite successful in promoting the Irish language. The Gaelic League variable measures how many branches of the organization were active in a location. Relatedly, the Irish speaker share records what fraction of the population self-report as able to speak the Gaelic language. As Irish is the native language of Ireland, this measures the extent of British influence in an area. The Gaelic league data are drawn from Crowley et al. (2017) and language is recorded directly in the 1911 Census.

Table 1 presents an initial look at the determinants of donations.⁶ For comparison purposes, I replicate the $n = 100$ Constituency-level analysis at an $n = 331$ barony-level specification. Baronies are a smaller geographic unit, broadly resembling townlands, but as the date from as early as the

⁴For understandable reasons, arrested rebels were principally held in jails in Britain – and thus Deported – rather than held in Ireland.

⁵Narciso and Severgnini (2016) go further, using Famine intensity as an IV for becoming a rebel combatant.

⁶Robustness checks are included in Appendix C3, confirming the results hold when excluding Dublin and Belfast from the sample. Appendix C4 provides additional regression tables, looking at alternative measures of Famine incidence (blight measures as provided in Goodspeed, 2016) and inequality (standard deviation of land value, and the agricultural laborer-to-farmer ratio.) These results are not conclusive in either direction.

1400s they are much less homogenous/directly comparable than political constituencies. Summary statistics for constituency-level and barony-level variables, including the source of each variable, are available in Appendix C.

Focusing initially on the statistically significant results, the first finding from Table 1 is that donations to the INAA are increasing in the proportion of the local population that is Catholic. Although many priests and bishops provided support to the INAA, the result may reflect national identity more than religious persuasion. Catholic affiliation likely serves as a proxy for identifying as an Irish national rather than a British national, who tended to be Protestant. British nationals, who wanted to remain in the United Kingdom, were certainly less sympathetic to the Easter Rising than the average person who saw themselves as Irish. This division continues to the modern day in Northern Ireland.

The second statistically significant result indicates that donations are positively correlated with the literacy rate. Formal education was not uniformly available at this time period so large parts of the country were quite illiterate. It seems reasonable that more literate people benefit more from the existing regime, and would be less likely to support revolutionaries. The opposite is true. We see a large *positive* coefficient on literacy: in column 1, a one percentage point increase in the literacy rate increases donations per thousand people by over £80.

There is some evidence that donations are higher where there are relatively more men, which is quite intuitive if we suspect conscription into WWI was a threat, and the barony-level analysis suggests donations are higher in areas that suffered more during the Famine. While the point estimates between the two approaches are broadly similar in sign and magnitude, few results are statistically different from zero. It is somewhat unsurprising that regressions with relatively low statistical power produce few significant results.

The prior focus on statistical significance, and the relatively few statistically significant results, serves to highlight the large variance of the estimates. With a substantial number of covariates relative to the sample size, some of which are correlated with each other, minor changes in specification can wildly affect the point estimates. In the presence of multicollinearity, OLS point estimates are unbiased but the increased variances can lead to unstable results/poor predictive power.

While arguments can be made for the inclusion of any of the independent variables, the Variance Inflation Factors suggest a serious multicollinearity problem. Both specifications report maximum VIFs greatly in excess of rule-of-thumb thresholds of 5 or 10. Consequently it is prudent, given the extent of collinearity, to remove some of the variables.

The choice over which variables to remove is theoretically ambiguous, and allowing manual removal comes at the risk of p-hacking and/or selective representation. For these reasons, I employ a Lasso estimator (Tibshirani, 1996) to select a sparse set of key predictors from the larger pool of initial variables. This trims down the variable set in a hands-off way, and focuses attention on which variables are statistically most important. Most Lasso-based techniques can be viewed as finding values of β to minimize bias, subject to some penalty (a Lagrangian shadow-price λ) for including variables. In OLS, this λ penalty is zero, and so there is no shrinkage of coefficients toward zero/all variables are included. The relative weight an estimator places on bias versus variance is denoted by α . Different techniques choose different α 's and λ 's. To ensure my findings are robust to variations in α and λ ,

Table 1: Determinants of monetary value of per capita donations to the INAA

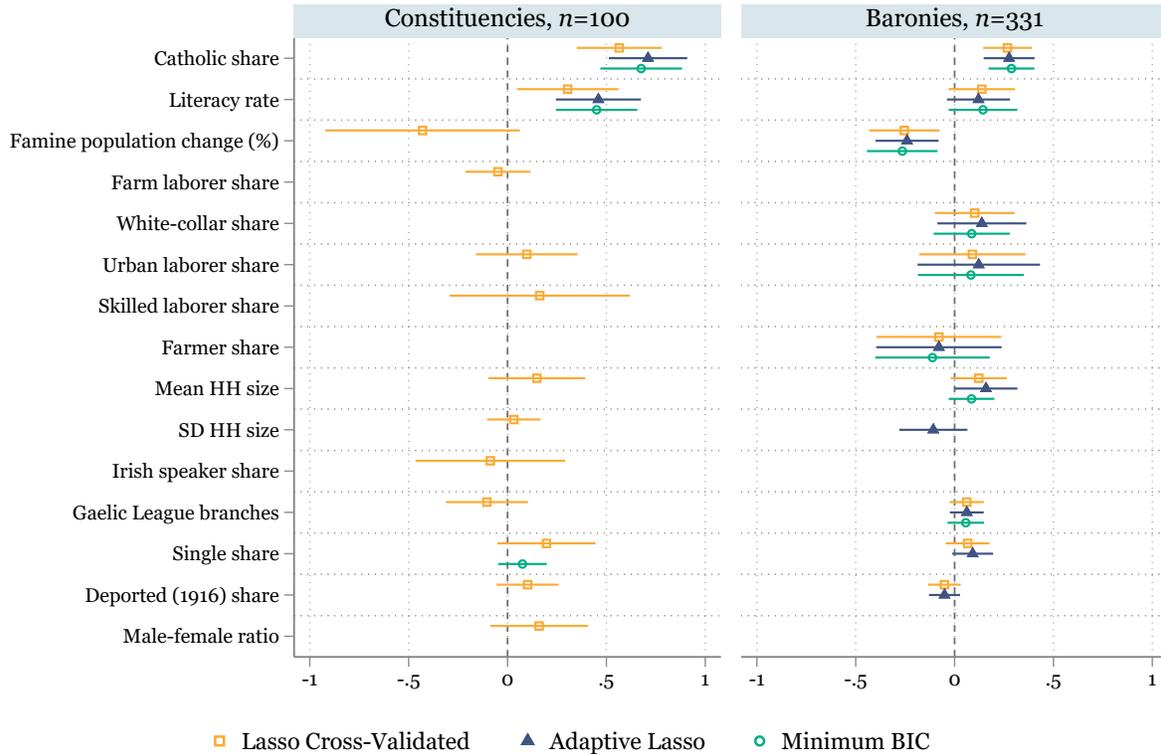
	(1)	(2)
	Constituencies	Baronies
Personal/socio-economic variables		
Catholic share	31.9*** (6.8)	21.0*** (6.5)
Literacy rate	86.1*** (30.0)	39.6* (20.9)
Average age	1.07 (1.8)	1.35 (0.9)
Male-female ratio	22.3** (8.9)	11.5 (15.8)
Single share	81.3 (50.9)	50.4 (33.5)
Farm laborer share	-74.0 (50.1)	-35.5 (52.7)
Urban laborer share	-49.8 (62.1)	-2.21 (69.9)
White-collar share	-97.5 (67.4)	2.27 (70.3)
Skilled laborer share	14.2 (49.4)	-12.9 (63.1)
Farmer share	-52.0 (48.4)	-44.7 (58.8)
Log land values	-2.41 (1.8)	-1.48 (1.3)
Mean HH size	6.47 (5.4)	8.64 (5.3)
SD HH size	1.05 (1.9)	-4.00 (3.5)
Historical/political variables		
Deported (1916) share	882.3 (673.3)	-199.2 (193.4)
Famine population change (%)	-27.0 (20.3)	-34.1*** (12.4)
Gaelic League branches	-1.06 (0.9)	1.11 (0.8)
Irish speaker share	-6.17 (11.5)	-4.07 (7.1)
Constant	-187.6* (110.3)	-145.7 (97.0)
Max. VIF	161.65	74.07
R ²	0.60	0.27
Observations	100	331

Table reports the effect size measured in pounds per thousand of population.

Standard errors, clustered by county, are in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Figure 3: Standardized coefficients and confidence intervals from different Lasso estimators



I employ three techniques: ten-fold cross-validated Lasso as used in Saavedra and Twinam (2020); adaptive Lasso as proposed by Zou (2006); and a ‘parsimonious’ approach which chooses variables to minimize the Bayesian Information Criterion. I supplement these approaches with random forest analyses, which are available in Appendix C.

Figure 3 shows the variables selected and corresponding coefficients produced by the Lasso estimators. Figure 3 reports point estimates in standardized coefficient form. Rather than directly comparing the units reported in Table 1 (e.g. comparing literacy rates measured as a percent of the population against land values measured in £/acre), the standardized coefficient approach scales the variables so that the interpretation of the coefficient is in standard deviation increases in X on Y . Furthermore, I report the point estimates as *postselection* coefficients. That is, the Lasso is used to select variables and then OLS is used to estimate the effect of those variables. For example, the point estimates at the top of the Constituency-level analysis all imply that a one standard deviation increase in Catholic share is associated with more than a 0.5 standard deviation increase in donations to the INAA. The width of bars indicate the 95% confidence intervals.

The first finding from Figure 3 is that many variables are poor predictors of donations. For the small- n constituency analysis, the adaptive Lasso retains only two variables (Catholic share and literacy rate). The variables that are included in the left-hand panel by the Cross-Validated Lasso are typically insignificantly different from zero.

There are differences across the specifications, but a coherent narrative emerges when the results are taken collectively. In general the largest point estimate is for Catholic share. Literacy is the next largest predictor, although the effects are weaker in the barony-level analysis. All point estimates on the white-collar share in the right-panel are positive, though the confidence intervals include zero. Similarly, the negative effect of the Famine is tightly estimated in the right-hand panel. The negative coefficient on the Famine can be interpreted as areas with the largest population declines (i.e. worst affected) have the highest donations to the INAA. As the Famine was seven decades earlier, this finding is consistent with long-run historical grievance. The statistical relevance of these variables are confirmed in Appendix C, where the same set of variable are ranked as most important by the Random Forest analysis.

It is reassuring that the conclusions are consistent across the two geographic specifications. This substantially alleviates many concerns associated with aggregated data. However if both specifications suffer from a common ecological fallacy problem, then the results could still be misleading. For example one possible interpretation of the Catholic share coefficient, however unlikely, is that the donations are coming from Protestants in overwhelmingly Catholic areas rather than coming from Catholics themselves. While this may be an unlikely scenario, an analysis of a sample of micro-data affords greater certainty about the results. Section 3.1 provides such an analysis.

3.1 Individual-level matched sample results

This section presents the empirical results on a Census-matched sample of every donor listed from County Kildare or County Meath. In addition to avoiding an ecological inference problem, the individual-level ($n = 122,000$) analysis provides vastly more statistical power than an analysis at a barony- or constituency-level. Counties Kildare and Meath were chosen in part because of their representativeness: both contributed approximately average per capita donations to the INAA.

As the original manuscripts were unreadable to character recognition software, matching donors from the INAA files to individuals in the 1911 Census was done manually. Hand-checking each matched donor has the benefit of lowering concerns about false positives. Nonetheless, the matching was not perfect and warrant some discussion. There are certainly missed donors (i.e. false negatives) in the data. There are at least two reasons why a donor will not be matched with a person in the Census. The first reason is if the donor was listed as part of a group donation or was otherwise anonymous. As donations below 5 shillings were grouped together and included as “Smaller sums”, these donations will be missed at the individual level.⁷ The second reason a donation may not be matched is that their name occurs too regularly to allow unique identification, e.g. “James O’Reilly”. If the differences between individual- and aggregate-analyses are small, we can interpret that as evidence that the matching sample is representative.

A second caveat worth mentioning here is that this analysis necessarily loses community-level data like Famine deaths. Regressions at the individual level are estimated off within-county variation, comparing neighbor with neighbor. Consequently any historical/political variables will be captured by

⁷Smaller sums can be geolocated in the aggregate analyses, however. This is one justification to include both individual and aggregate analyses.

Table 2: Determinants of personally donating to the INAA

	(1) Co. Kildare	(2) Co. Meath	(3) Combined
Male	0.13*** (0.03)	0.17*** (0.04)	0.14*** (0.02)
Catholic	0.077** (0.04)	0.099** (0.04)	0.085*** (0.03)
Literate	0.093*** (0.03)	0.054** (0.03)	0.074*** (0.02)
Married	0.14*** (0.05)	0.047 (0.04)	0.093*** (0.03)
Irish speaker	0.51** (0.2)	0.12 (0.1)	0.26** (0.1)
Agricultural worker	0.085 (0.08)	0.041 (0.06)	0.056 (0.05)
Laborer	-0.051 (0.06)	-0.17*** (0.05)	-0.11*** (0.04)
Farmer	0.26*** (0.09)	0.13* (0.07)	0.18*** (0.05)
Skilled laborer	0.15 (0.1)	-0.019 (0.09)	0.064 (0.07)
Soldier	-0.22*** (0.05)	-0.14** (0.05)	-0.19*** (0.03)
White collar	0.52*** (0.2)	0.90** (0.4)	0.66*** (0.2)
HH size	-0.0040 (0.007)	0.023*** (0.008)	0.0099** (0.005)
Age	0.0012 (0.0008)	0.0027*** (0.0008)	0.0020*** (0.0006)
County indicator			0.048** (0.02)
Constant	-0.14** (0.06)	-0.34*** (0.09)	-0.27*** (0.05)
Max. VIF	1.6	1.7	1.6
R ²	0.002	0.002	0.002
Observations	58,883	63,169	122,052

Table reports the effect size on donor status.

Coefficients and standard errors are multiplied by 100 for interpretation.

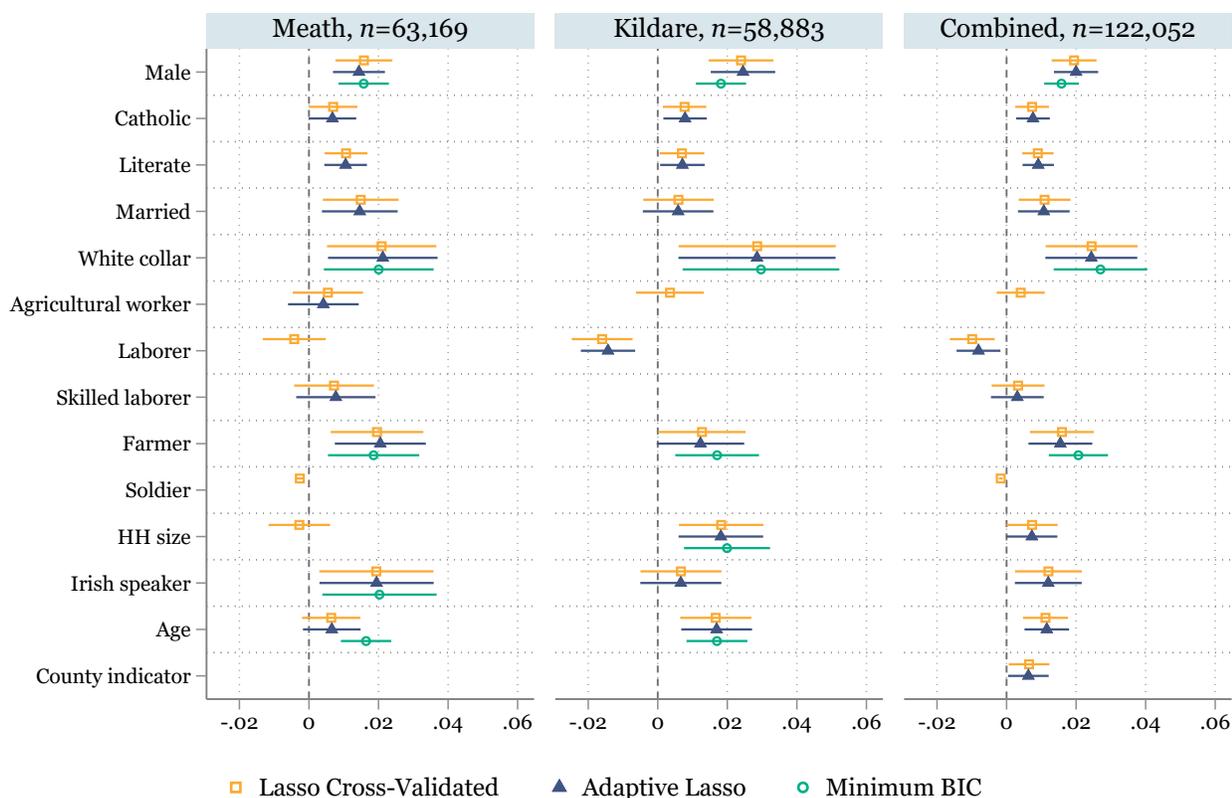
Robust standard errors are in parentheses.

the intercept as they do not vary across neighbors. The one exception is Irish speaker share, which can of course be converted to an individual level measure. Table 2 shows the results of the individual level analysis, regressing a dummy variable of donor status on a list of covariates.

As the dependent variable is donor status, we can interpret the coefficients as changes in the probability of donating. Our first result is men are more likely to donate to women, across all three specifications. This result is statistically significant at traditional thresholds, at least in part because of the increased sample size. By expanding the number of observations from the low hundreds to tens of thousands, there is also substantially less risk of multicollinearity. This is reflected in the low VIF scores reported in the table footnotes, and suggestive that Lasso-type approaches will largely replicate OLS estimates.

Viewing the results side-by-side, it is clear that the estimated effects are broadly consistent across the two counties. Further, the conclusions are consistent with the aggregate-level results. Catholic affiliation is strongly (positively) associated with being a donor, as too is literacy. This is reassuring, suggesting the constituency and barony analyses are not merely spurious or suffering from significant aggregation biases. Being a (British) soldier unsurprisingly lowers the probability of donating to republicans. In terms of magnitude in the combined sample, it is about the same size as being an Irish speaker, though of opposite sign.

Figure 4: Standardized coefficients and confidence intervals from micro-level data



Classification as a white-collar worker increases the probability of being a donor by one-half of a percentage point in Kildare and 0.9 percentage points in Meath. This is the largest point estimate in magnitude, and suggestive that richer people donate more. In fact, that finding is strongly supported by the robustness checks in Figure 4.

Figure 4 applies our three Lasso algorithms to the individual-level data. Consistent with the low reported VIFs, the Lasso-based responses do not substantially depart from the OLS results. Consequently the broad categorization of donations coming from higher-SES, Catholic males prevail in this analysis. The results are similar in magnitude to those reported in Figure 3, but generally with tighter confidence intervals.

In Appendix C, Figure 7 plots the importance (rank of mean increase in Gini index) from the three specifications, with longer/wider line indicating greater importance. The variable accorded the most weight in the random forest analysis is the white-collar profession indicator. More generally, the variables in Figure 7 are presented in order of their average importance. White-collar occupation is the most important predictor in both the Meath sample and the combined sample, and is the second most important in the Kildare sample. This is entirely consistent with the earlier findings that donations increased in literacy and SES. This analysis also suggests the Farmer variable is a good predictor of donation, much more so than Farm Labourer.

4 Conclusion

By their very nature, revolutionary organizations typically exist with a dubious legal status. Association with such organizations can carry serious legal consequences. It is thus unusual for revolutionaries to keep detailed records of supporters, and this fact limits society's ability to study them.

The Irish National Aid Association was founded in the immediate aftermath of the Easter Rising of 1916, with the stated goal of raising funds for the combatants and their dependents. Despite the imposition of six months' martial law after the Rising, and the political repression that inevitably came with that, the INAA collected money and kept records of donors between 1916 and 1919. By appealing to the financial distress of the combatants, the INAA created and exploited a constructive ambiguity of notionally being philanthropic. The INAA remained legal, and the list of donors survives.

The INAA donor lists, when linked with demographics and other local information from the Census, can be used to analyze who donated to the revolutionaries. The economics of philanthropy has a proud history of analyzing the determinants of donating to charitable causes. This paper contributes with unique data on who contributed to armed insurrectionists.

Though donors could not have known it at the time, the INAA was ultimately a contributory factor to what is now the Republic of Ireland securing independence five years later. The funds raised by the INAA thus had a significant effect on Irish history, helping to rebuild the republican movement between the Rising and independence. Sufficient funds were raised to subsidize everyone who had participated in the Easter Rising. Many of those would go on to fight in Ireland's War of Independence. De Bromhead et al. (2020) notes that local INAA donations are predictive of subsequent electoral success, and indeed some notable recipients of INAA funds went on to hold high office. Who were

these people who provided financial support when it was needed?

Using both aggregate and micro-level data, I use machine learning techniques to analyze the determinants of donating. The interpretation most consistent with the evidence is that donations came from better educated, higher-earning individuals. Donations come disproportionately from areas with a larger share of people who were literate, Catholic, and speakers of the Irish language. While self-identification as Catholic is a strong predictor, interpretation of this result must be considered in the historical context of the Northern Irish conflict — religion is likely best considered as an indicator of national identity. Random forest analyses suggest that literacy and working in a white-collar profession rank among the most statistically important determinants of giving. I find strong evidence that long-run historical grievances also predict support, with areas that experienced larger population declines during the Great Famine donating more.

While it may be intuitively appealing, the conclusions suggest that poverty is not an important determinant of revolutionary support. In fact, the opposite may be true. The overall literacy rate is positively associated with donation. One explanation may be that the ability to read increases political engagement, or it may be that illiterate people simply had more pressing concerns. The evidence on literacy and white-collar share of the population suggests that revolutionary support comes from richer, more educated people. In this sense, donations have characteristics similar to luxury goods. These people are also more likely to know the full implications of their actions, which similarly suggests that simple education campaigns are unlikely to succeed in reducing revolutionary sentiment.

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A Historical Background

Understanding the Irish National Aid Association requires a brief explanation of early twentieth century Irish history, and the Easter Rising in particular. While this appendix provides sufficient historical background to understand the institutional context, it is intended as a brief summary and interested readers should refer to any of several texts on the topic including Ferriter (2017), McGarry (2010), Murphy (2014), or Nic Dháibhéid (2012) for more details.

At the start of the twentieth century, Ireland was still under British rule. While the early twentieth century was a turbulent period in Irish history, the Easter Rising of 1916 was an insurrection that became a defining moment in the relationship between Britain and Ireland.⁸

During the Easter Rising, seven leaders of the clandestine Irish Republican Brotherhood (IRB) proclaimed themselves the provisional government of a new, independent republic. With unsubtle parallels to America in 1776,⁹ and supported by around 1,000 members of the Irish Volunteers and Irish Citizen Army, the leaders occupied major landmarks in Dublin.

The Rising lasted less than a week. The insurgents were quickly overwhelmed, as the British army surrounded Dublin with upwards of 15,000 men. More brave than well-resourced, the Rising was thus a military disaster. The leaders were court-martialed and executed. In total nearly five-hundred lives were lost, and over 2,000 people were imprisoned (Lee, 1989).

Nonetheless the prevailing narrative of the Rising is not one of failure, but of the start of a successful revolution. After their demonstrable willingness to assert their goals through force, the rebels started to gain public support. Two years later many of the rebels—those who survived—were elected to Parliament: the General Election in 1918 was a landslide victory for their political party, winning nearly three-quarters of the seats on the island. Names from the 2,000 imprisoned rebels would go on to dominate Irish politics for the next fifty years.¹⁰ The newly elected government began what would become known as Ireland’s War of Independence. The Anglo-Irish Treaty followed in 1921, giving independence to (southern) Ireland.

Support for the rebels in the immediate aftermath of the Rising was tepid at best (McGarry, 2010, p.278). The reversal of fortunes from imprisonment to high office did not happen in a vacuum. Public opinion, coupled with significant financial support, propelled the revolutionaries towards power.

The Irish National Aid Association, officially philanthropic but indisputably political, was established in May 1916, less than a month after the Rising, to “provide for those in Dublin and in certain other parts of Ireland who have suffered as the result of the recent Insurrection.”¹¹

In addition to providing funds, the INAA were adept at republican propaganda. Ferriter (2017, p 167) notes the INAA’s publication *Aftermath of Easter Week* stated that “the nation’s life has been purified and renewed” as a result of the Rising. A letter to a local newspaper in mid-July asked if the real goal of the INAA was “the glorification of the [. . .] insurrectionaries?” (Murphy, 2014).

⁸The Easter Rising began on April 24—Easter Monday—thus the name.

⁹The rebels promised “to pursue the happiness” of the nation.

¹⁰The rebels included three of the first four Taoisigh/Prime Ministers (W.T. Cosgrave, Éamon de Valera, and Seán Lemass). De Valera also served as President between 1959–1973.

¹¹This sentence was included in the published donor rolls.

Concurrent with the foundation of the INAA, the Irish Volunteer Dependents' Fund (VDF) was founded by Kathleen Clarke. Clarke was unmistakably associated with physical force republicanism, having previously co-founded *Cumann na mBan*, a female-focused paramilitary organization.¹² Her husband, Tom Clarke, was the most senior of the seven leaders of the Rising, and was executed. Further, Kathleen Clarke was in the unique position that both her husband Tom and her brother (Edward Daly) had been executed for their role in the Rising. The VDF made no secret of their personal relationships with the revolutionaries, noting that the Fund was “administered by the immediate relatives of the Executed Leaders of the Rising, which guarantees the sympathetic distribution of money entrusted to the Committee, who in accepting the work are acting as their dead husbands, sons and brothers would desire.”¹³ In August, under pressure from donors, the two associations merged, to form the Irish National Aid & Volunteer Dependents' Fund (INAVDF), with the more militant Clarke as the “dominant partner” (Murphy, 2014, p. 73). For short, I refer to these two organizations as the INAA.

Though the links between the INAA and the insurgents are apparent from the organization's name and objective, it is instructive to provide further evidence. Recall that the Easter Rising had been organised by the Irish Republican Brotherhood (IRB). Historians have documented that the IRB and the INAA were closely connected. Townshend (2006, p. 327) notes the INAA was used “as a vehicle for rebuilding the IRB.” Hart (2011, p. 19) states that the INAA “quickly fell under the sway of the IRB.” Joseph Lawless (Bureau of Military History Witness Statement 1,043), who participated in the Easter Rising, and would later reach the rank of colonel in the Army reinforces the argument that the INAA's “aims being legitimate or at least tolerable in the eyes of the British authorities, it became the cover organization for the regeneration of the Volunteer movement.”¹⁴

The overlap in personnel between the IRB and INAA is clearest in the form of Michael Collins. Collins was appointed Secretary of the INAA in early 1917. Collins was a member of the IRB's Supreme Council, had fought in 1916, and would later become the IRA's Director of Intelligence.¹⁵

While the Easter Rising occurred without a democratic mandate, the dynamics of the situation changed after December 1918. The revolutionary *Sinn Féin* party,¹⁶ who had not contested the prior General Election, won three-quarters of the seats on the island of Ireland. This electoral success precipitated the start of Ireland's War of Independence in 1919 and the creation of Northern Ireland in 1920. *Sinn Féin* withdrew from the British Parliament, and formed what would ultimately become the Irish parliament. Its first government included Michael Collins, secretary of the INAA.

The INAA funds played an important role in bridging the gap between the Easter Rising and the War of Independence. As Nic Dháibhéid (2012, p.707) put it, the INAA “played a decisive role in [...] laying the foundations for a reinvigorated political and military campaign after 1917.” Further,

¹²Cumann na mBan translates to “The Women's Branch” and its Executive provided strong backing to the VDF.

¹³This sentence was also published in their donor rolls.

¹⁴The “Volunteer” Lawless refers to is the Irish Volunteers—the rank and file who supported the IRB during the Easter Rising.

¹⁵The relationship between the IRB and the IRA is somewhat complex. The IRB organised the Easter Rising, and had been supported in arms by the Irish Volunteers. After the 1918 Election, the Irish Volunteers were declared the Army of the Irish Republic (IRA).

¹⁶The direct translation of *Sinn Féin* is “Ourselves”, though some authors prefer “Ourselves, alone” for emphasis.

De Bromhead et al. (2020) find that donations to the INAA, holding a large number of control variables constant, have a strong predictive effect of insurgent electoral success in the General Election in 1918. Understanding the sources of these funds is thus crucial to understanding Ireland's revolutionary period.

As noted above, the INAA's humanitarian front generated a creative ambiguity that permitted its continued existence. The British government of the period routinely criminalised groups it considered subversive.¹⁷ There likely had to be that element of doubt for the INAA's legal existence to continue.

This humanitarian front naturally raises questions about whether donors knew what they were supporting. The explicit goal of the INAA was providing support for people who had participated in the Easter Rising. Dozens of these men were contesting elections, and hundreds participated in the subsequent political violence during the War of Independence. In retrospect, it seems relatively obvious that an organization founded by Katherine Clarke and run by Michael Collins would assist recruitment to the Volunteers and help candidates' election hopes. Nonetheless, there is an argument that donors did not appreciate at the time that INAA funds would further the Irish republican movement. That element of doubt will persist.

What is not in doubt was whether donors knew they supporting combatants. That much is evident, as the INAA made it clear they were providing funds for the revolutionaries and their families. Appealing to the aid not just of the innocent widows and children of insurgents, but also the imprisoned themselves, ensured the INAA was immediately considered not strictly philanthropic in nature. There is no doubt that the public knew these funds would help these men, i.e. they were donating to revolutionaries.

¹⁷Examples include *The Irish Worker* newspaper, the Sinn Féin political party, the Gaelic League literary society and, on at least one occasion, a Gaelic football match.

B Data Source and Digitization

The INAA was formed to provide financial aid to those who participated in the Easter Rising and their families. The INAA was thus “firmly associated with radical separatism” but maintained a “dubious façade as a non-political humanitarian body” (Murphy, 2014, pp. 71–78). The INAA’s respectable face created an ambiguity that permitted a detailed list of donors to be kept. Starting in June 1916 and continuing through the end of 1918, the INAA published lists of donors. Two examples from the listing published in the *Evening Herald* newspaper on June 10th are provided in Figure 1. Further donations were published on June 17th in the *Irish Independent*, and so on. These donor rolls provide an unparalleled lens into the financial support of revolutionaries. A more thorough sample scan is provided in Figure 5.

The National Library of Ireland holds a volume listing subscribers to the INAA. Specifically there are six boxes of content with library call numbers MS 24,320–24,392 and MS 23,464–23,504. As a result of this project, these scans are now publicly available online and I thank William Murphy of Dublin City University for drawing my attention to the resource.

The documents are in reasonably good condition but attempts at computer-aided transcription/OCR failed. Manual labour was needed, which significantly increased the cost of transcription. This was primarily done by graduate students at the University of Tennessee, with some later work outsourced online. The value of every donation, and a string variable recording the given location, was transcribed. One exception was if the donation was unambiguously outside of Ireland, which many large donations were. Donations below 5 shillings were typically grouped as “Smaller sums” and not personally identifiable. One recent local area publication (Padraig Leyden’s “Selton Hill”, published by Leitrim County Council) provides one example of what comprised these smaller sums, as shown in Figure 3. Many donations are listed as “A friend”. However this smaller sums listing is just one area and they are not available nationally.¹⁸

Through digitization of these records, I created a dataset of donations to the INAA. With the spreadsheet of locations, I used a combination of ArcGIS’s geolocation service and R’s ggmap library to return longitude and latitude coordinates. Every unique string address was checked with the longitude and latitude. These were in turn mapped to 1871 Barony and 1918 Electoral Constituencies boundaries. While the majority of geolocations resolved to reasonable Irish political constituencies, some manual adjustment was required. For example, the eighth largest city/town in Ireland is named Dundalk. Automated geolocation of ‘Dundalk’ will however likely refer you to Dundalk, Maryland, a town of 64,000 people about six miles outside of Baltimore.¹⁹ Similar conclusions were drawn about Letterkenny, which I concluded referred to the largest town in Co. Donegal rather than an unincorporated community in Ontario. Where the specific constituency was not obvious (e.g. a donation listed to a town that straddles two constituencies), I evenly distributed the donation among candidate constituencies.

A similar procedure was applied to allocate donations to baronies. However, the manual adjust-

¹⁸I note also that the person recording these donations struggled with the spelling of “Hargaden”.

¹⁹Baltimore, Maryland is incidentally named after Baltimore, Co. Cork.

Table 3: “Smaller sums” from around Gorravagh, Co. Leitrim

10s/0d	- Tynan Dublin	Mrs J Wrynn Satrissaan	Mrs McLoughlin Fanshinagh
Mr Charles Flynn Adoon	J Logan Annaghaderg	P Slevin Adoon	Tom Moran Junr Corraheigh
5s 0d each	J Reynolds Fanshinab	J Guckian Glostermin	M Ellis Drumoughly
M Murphy Glostermin	Mrs F Taylor do	J Maguire Adoon	Mrs Tiernan Cornulla
W Murphy Cloonarne	- Frazer Sligo	P Reynolds do	Mrs Tiernan do
F Canning Drumhirk	J Reynolds Breandrum	P Murray do	Miss Conelrey Mahanna
P Henry Sligo		Mrs Gallagher do	- Baosh Dublin
Miss Logan Annaghaderg		J Kelly Knockroock	P Mc Kiernan Adoon
2s/6d each	1s/0d each	Mrs Hegarty Corduff	F Heeran Tooman
Peter Doonan Stracarne	Mrs M McCabe Shrivdilla	Mrs Cassels Drumgarn	P Mulvey Sallyfield
A Friend do	Mrs Latimer Doonera	J Heeran Garradice	E Doonan Satrissaan
Miss Walsh Mobill	Mrs Mc Givney do	- Lynch Drumloen	Miss Rosie Clyne Stracarne
J Coafrey Doonera	J Keegan do	J Scollan Cornagan	F Doonan Gabadrush
J Murphy Satrissaan	D Reynolds Aughaboneil	J Heeran Adoon	P McCabe do
J Flynn Selton	L Canning Corgallion	Mrs J Flynn Garradice	D Casey Liomadaun
Fr Reynolds C C Foxfield	Tom Cunningham Corgar	P Heeran Drumcollip	P Bohan do
Mrs Ellis Fenagh	H Canning do	Mrs Heeran do	Mrs J Bohan Liomadaun
-Nevin Dublin	T Whelan Stracarne	E Heeran do	Miss Mulvey Satrissaan
A Friend Adoon	Miss Gannon Mober Cloone	L Canning Drumloen	M Monahan do
Thomas Murphy	A Friend Fenagh	D Bohan Adoon	J Barry do
Drumcollip	A Friend do	Mrs Heeran Aughaboneil	D Clyne Drummid
Mrs J Flynn Cornagan	Mrs Booth Tully Fenagh	A Friend Gorravagh	J Doonan do
Wm Banagher Garradice	Miss Beirne Foxfield	Anne Scally Garradice	F Murphy Adoon
Mc Cartin Dublin	J Muldoon Cloodrumin	- Mc Cabe Gabadrush	
A Friend	Miss Blind Foxfield	J Mc Keon Gorravagh	0s/8d
2s/0d each	B Smyth Greagh	M Mc Kiernan Satrissaan	- Mrs Clyne Drummid
B Donnelly Stracarne	J Scollan Shrewane	J Heeran Drumcollip	
M Donnelly Stracarne	Mrs Thompson Gorravagh	J Monahan Gabadrush	0s/6d each
J Dwyer Adoon	Tom Wrynn do	J Reynolds Adoon	P Hunt Curraen
P Kennedy Stracarne	M Murray Adoon	Tom Reynolds do	W Harman do
McCullagh Selton	Miss Duggan Shrivdilla	P Mc Caffrey do	F Reynolds Liomadaun
J Murphy Annaghaderg	A Friend Gorravagh	Mrs Charles Heeran do	F Monaghan Satrissaan
Mrs Wrynn Fenagh	P Reynolds Adoon	E Reynolds Stracarne	Mrs Clyne Drumid
J Mulvey Corraheigh	M Hardigan do	Mrs Doherty Shrewane	M Bohan do
M John Hardigan Adoon	Mrs Scally Gorravagh	Mrs Moffat Mahanagh	M Clyne Drummid
J Murphy do	Mrs Mc Gary Cormore	Mrs Mitchell Cornulla Cloone	M Monaghan do
J Bohan do	S Greer do	Miss Wrynn Satrissaan	M Clyne do
Mrs M Bohan Labbyvelin	Miss M J Moran Stracarne	M Wrynn do	Miss Monaghan do
M Moran Fanshinab	G Canning Corgallion	J Duignan Adoon	F Fanning Fenagh
Mrs Ellis Glostermin Mobhill	W Greer Drumloen	P Moran Corraheigh	- Eacone do
J Mc Loughlin Adoon	J Flynn do	A Friend Gorravagh	A Irwin do
W Gray Annaghmore	D Flynn do	J Donnelly Lauragh	Miss Jennie Cox do
J Gormley Adoon	R Bohan Drumkilleen	Miss Hardigan Shrivdilla	Hugh Fanning Fenagh
Mrs F Mc Garty do	Mrs Mulligan Drinna	Mrs Curran Glostermin	C Fanning Glostermin
Miss S Mc Kiernan Satrissaan	Mrs Masterson do	Mrs Wrynn Drumreask	P Bohan Adoon
Mrs Doonan Cornagan	Mrs Barry do	Mrs Egan Crestermim	P Greer Cormore
A Friend do	Mrs Mc Weeny do	Mrs E Costello Fanshinagh	Mrs Whitlow Drumloenan
Mrs J Scollan do	P J Mc Kiernan Stracarne	Mrs Keegan do	A Friend Drumreask
J Giffney Coranore	Mrs Peter Murray Adoon	M Costello Meelick	Miss Mulligan Glostermin
M Guckian Annaghaderg	J Fox do	E Shanin do	W Bohan Drumreask
J Moran Corraheigh	J Flynn do	- Quinn do	Ellen Cullen Satrissaan
Mrs McManus Greagh Fenagh	J Short Corgar	- Rourke Fanshinagh	Mrs Reynolds Crestermim
Mrs Canning Halls Cloone	L Canning Laragh	Mrs Beirne Breandrum	J Moran Meelick
Mrs M Fox Drankensy	Mrs Mc Wemy Breandrum	A Wynn Corgar	Mrs Conlon Meelick
	E Tubman Shrivdilla	D Mc Garty Corraheigh	
	Mrs J Reynolds Corgar	Miss Hardigan Adoon	6s/4d - A Sympathiser
	M Wrynn Stracarne	M Dowd Sallyfield	
	J Canning Drumkilleen	M Mc Govern Mober Cloone	Total £16

ment for the barony-level analysis was substantially larger than for the constituency-level analysis. A crude geocoding into baronies was unsatisfactory for reasons I outline below. Consider a hypothetical case, where I again use Dundalk as an example. With baronies, a practical difficulty arises in that Dundalk, a town of 13,000 people, is split between the two “Dundalk North” and “Dundalk South” baronies. Only one of these baronies would be allocated the donation regardless of which side the donor actually lived. For the towns that straddle two baronies, I distributed the donations evenly on a per capita basis.

In total, I scanned and transcribed the geographical location and monetary value of 17,000 donations to the INAA between 1916 and 1918. By merging this dataset with details from the 1911 Census,²⁰ I match the value of the donations with the most recent sociodemographic profile of the area.

As the majority of donations can be geolocated to a small area if not to one individual, I use both 1918 constituency boundaries and baronies as geographic unit. The one-hundred constituency boundaries had been designed to ensure comparability across units. Consequently the constituencies provides best practice for an “apples to apples” comparison in terms of population sizes. I supplement the constituency analysis by instead breaking Ireland into 331 baronies as defined in 1871. Baronies are an older unit of measurement, some of which had been created in the 1400s, and the increased sample size provides more precision in the estimates. However, their boundaries had been updated only im-

²⁰I thank Alan Fernihough for sharing the Census data.

perfectly since the 1400s and are thus much more heterogenous than constituencies. For example, the seven baronies in Co. Carlow had an average population of 5,000 but the eleven baronies in Dublin had an average population of 43,000. Electoral constituencies have fewer disparities in population.

The INAA's annual accounts show a total of £140,000 was collected. Approximately 17,000 unique donations, totalling about £38,000 are recorded in the dataset. As discussed above, donations like the £60,000 collected North America were not included in the transcription. With 17,000 observations and £38,00 collected, the mean donation is somewhat above £2. However, the data are heavily skewed. The median is less than £1 and the modal contribution was 5 shillings, comprising one-third of all observations. A further 3400 donations, 20 percent of the entire sample, were for 10 shillings. Indeed, the figures above are themselves slightly misleading in favour of large donations as the collated "Smaller sums" like £11-19 collected in Templemore were aggregated together and listed as one large contribution. To take Figure 3 as one example, only seven donations from over 200 were of 5 shillings or above. For this reason the total amount donated from an area may be the most informative statistic.

C Additional Tables and Figures

C.1 Summary statistics and sources

Table 4: Summary statistics: Constituencies

	Mean	Std. Dev	N	Min	Max
Donations (£) per thousand people	15.20	13.7	100	0.00	68.07
Catholic share	0.72	0.3	100	0.07	0.99
Literacy rate	0.83	0.1	100	0.54	0.96
Average age	44.17	2.5	100	39.23	47.78
Male-female ratio	1.04	0.1	100	0.81	1.53
Single share	0.54	0.0	100	0.40	0.62
Farm laborer share	0.13	0.1	100	0.01	0.34
Urban laborer share	0.13	0.1	100	0.04	0.29
White-collar share	0.10	0.1	100	0.03	0.43
Skilled laborer share	0.20	0.1	100	0.05	0.53
Farmer share	0.34	0.2	100	0.00	0.71
Log land values	0.47	2.0	100	-2.30	5.98
Mean HH size	4.70	0.3	100	4.09	5.64
SD HH size	2.73	0.4	100	2.37	4.81
Deported (1916) share	0.00	0.0	100	0.00	0.02
Famine population change	-0.18	0.2	100	-0.44	0.32
Gaelic League branches	1.52	1.6	100	0.00	9.00
Irish speaker share	0.16	0.2	100	0.01	0.83

The unweighted donations variable is calculated from the original donor rolls. The variables from Catholic share through Standard Deviation of Household size are calculated from the 1911 Census, which is available online. The occupation shares are matched to the occupational classifications in Connor (2019). Log land values, per acre, is calculated from using the Census measure of rateable land valuation and dividing by total acreage. The Deported (1916) share, which records the fraction of local people who had been interned and deported in the aftermath of 1916, is published in Crowley, Drisceoil, Murphy, Borgonovo and Hogan (2017) and made available by William Murphy. The number of Gaelic League branches is also published in Crowley, Drisceoil, Murphy, Borgonovo and Hogan (2017) and made available by Eoin McLaughlin. The Irish speaker share is calculated from the 1911 Census.

The Constituency boundary files were drawn for the 1918 Election. These are available to download from openICPSR, <https://doi.org/10.3886/E120142V1>. The barony boundaries were drawn in 1871. These are available (with login) from the UK Data Service, <http://doi.org/10.5255/UKDA-SN-4999-1>.

Table 5: Summary statistics: Baronies

	Mean	Std. Dev	N	Min	Max
Donations (£) per thousand people	14.74	15.8	331	0.00	83.42
Catholic share	0.81	0.2	331	0.06	0.99
Literacy rate	0.82	0.1	331	0.43	0.96
Average age	45.12	1.9	331	33.65	49.36
Male-female ratio	0.97	0.1	331	0.64	1.40
Single share	0.56	0.0	331	0.44	0.68
Farm laborer share	0.18	0.1	331	0.01	0.45
Urban laborer share	0.11	0.1	331	0.01	0.31
White-collar share	0.07	0.0	331	0.02	0.35
Skilled laborer share	0.14	0.1	331	0.03	0.47
Farmer share	0.42	0.2	331	0.00	0.79
Log land values	-0.28	1.0	331	-3.06	6.63
Mean HH size	4.64	0.3	331	3.87	6.24
SD HH size	2.68	0.4	331	2.21	5.92
Deported (1916) share	0.00	0.0	331	0.00	0.03
Famine population change	-0.24	0.1	331	-0.52	0.33
Gaelic League branches	0.49	0.9	331	0.00	5.00
Irish speaker share	0.15	0.2	331	0.00	0.95

C.2 Random Forest Analyses

Figure 6: Relative importance from random forest analyses on barony and constituency data

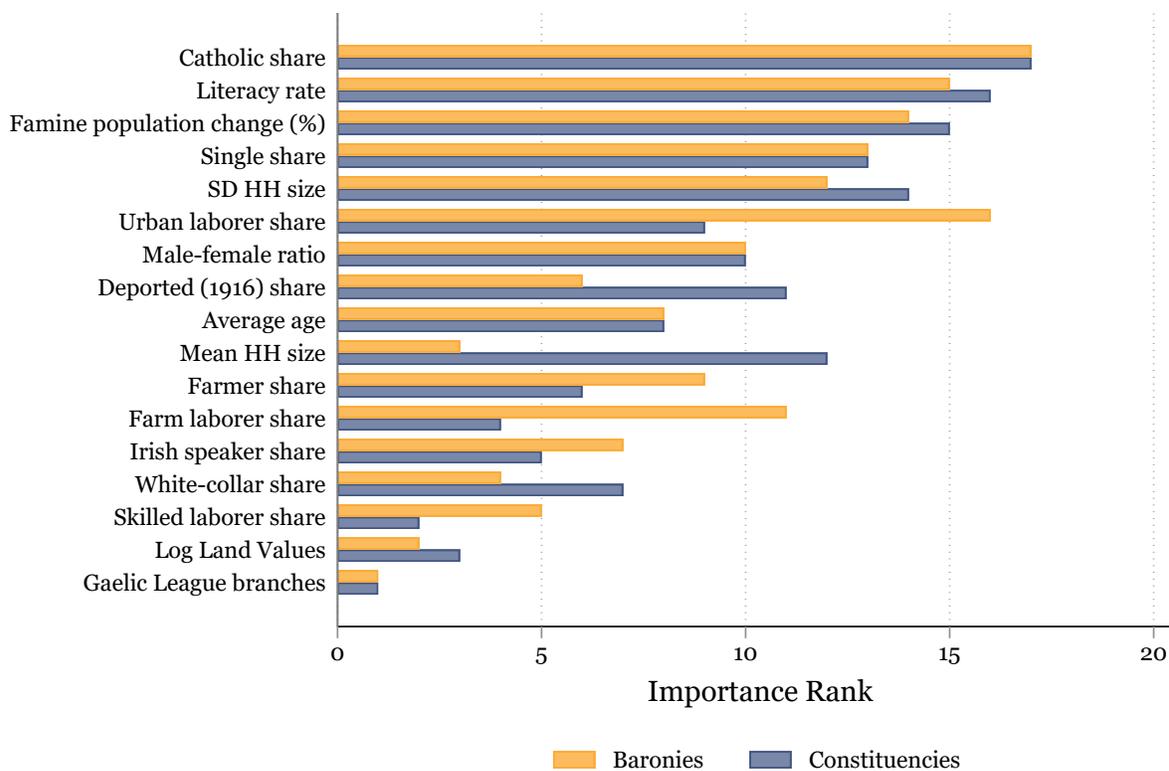
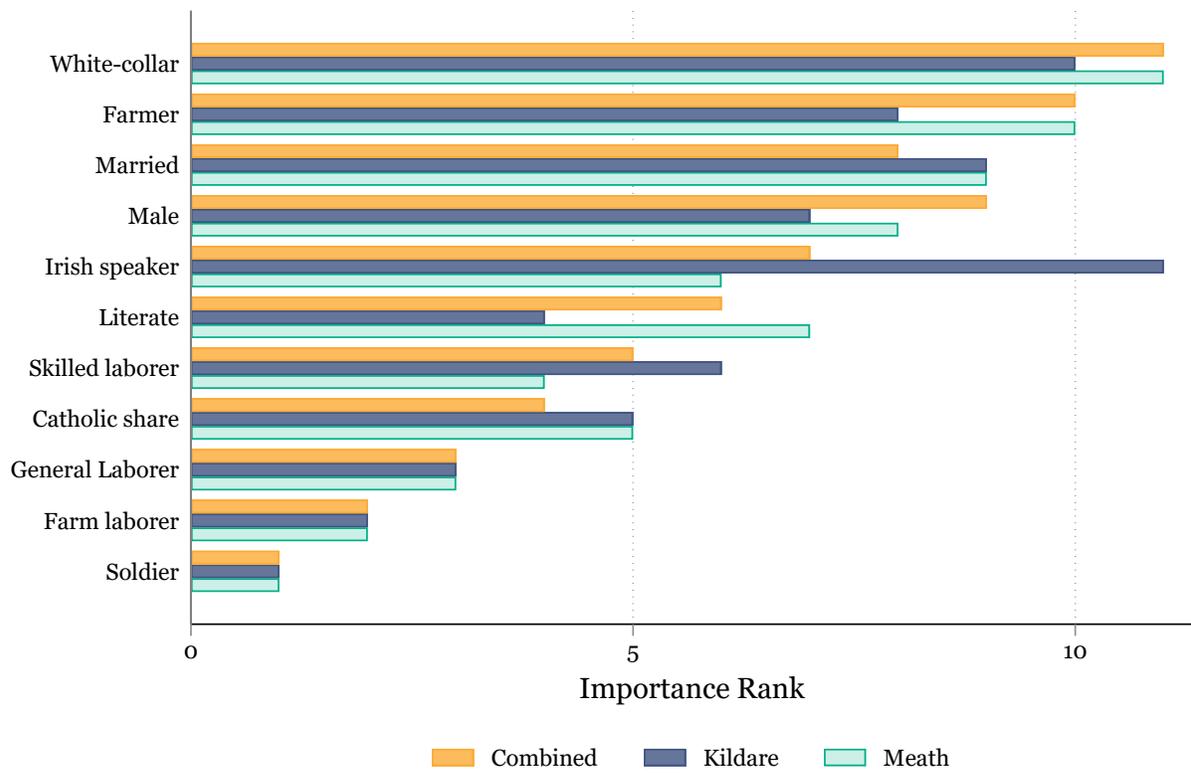


Figure 7: Relative importance from random forest analysis on individual-level data



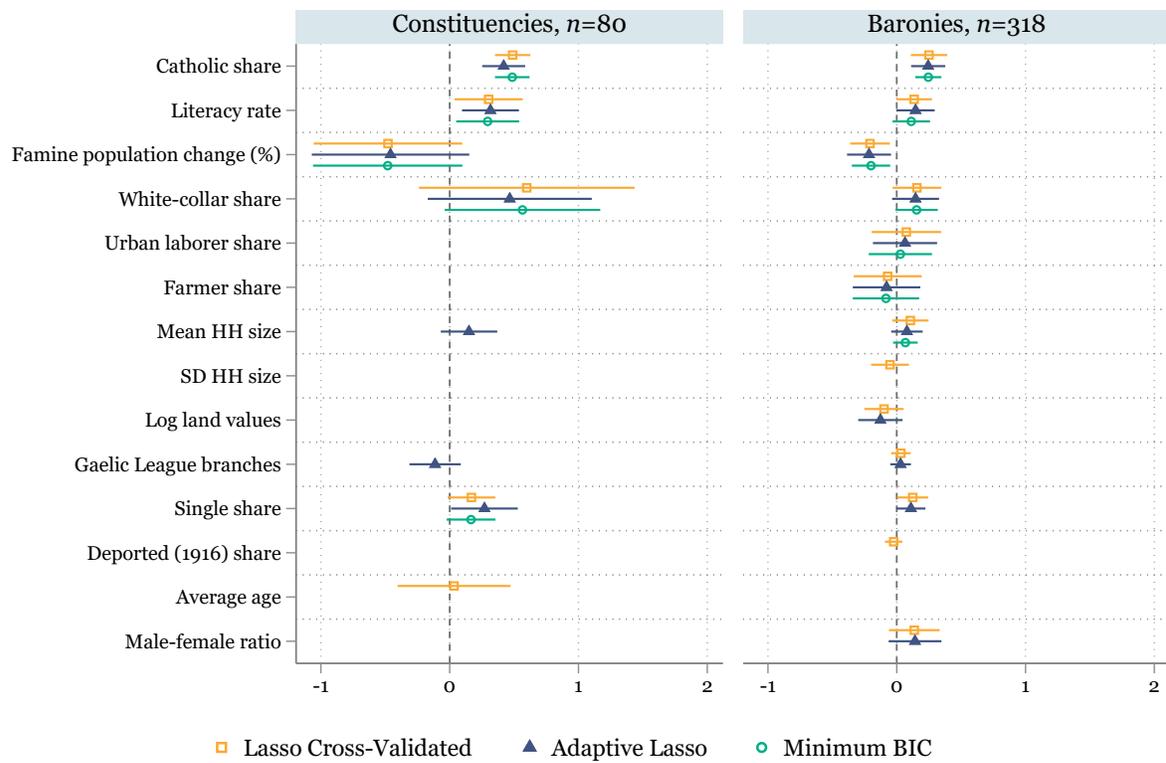
C.3 Results excluding Dublin and Belfast

Table 6: Determinants of per capita donations to the INAA (excluding Dublin and Belfast)

	(1) Constituencies	(2) Baronies
Catholic share	31.3*** (7.8)	21.0*** (6.8)
Literacy rate	106.3*** (33.0)	39.9* (21.7)
Average age	0.74 (1.9)	0.97 (0.9)
Male-female ratio	65.0** (31.5)	19.4 (18.3)
Single share	178.1** (75.4)	56.1 (35.3)
Farm laborer share	-26.5 (75.1)	-44.6 (51.7)
Urban laborer share	-79.1 (121.4)	-20.0 (71.6)
White-collar share	51.5 (90.2)	33.7 (69.4)
Skilled laborer share	51.5 (82.7)	-50.1 (64.5)
Farmer share	-28.4 (80.1)	-56.8 (57.8)
Log land values	-7.67** (3.7)	-1.78 (1.5)
Mean HH size	1.89 (6.0)	7.70 (5.1)
SD HH size	-3.91 (3.7)	-3.09 (3.6)
Deported (1916) share	23.8 (345.7)	-162.7 (199.3)
Famine population change (%)	-54.8** (24.7)	-35.0*** (12.0)
Gaelic League branches	-1.44 (0.9)	0.98 (0.9)
Irish speaker share	5.34 (9.3)	-3.76 (7.1)
Constant	-290.9** (130.1)	-126.5 (94.7)
Max. VIF	134.09	67.66
R ²	0.61	0.28
Observations	80	318

Table reports the effect size measured in pounds per thousand of population.

Table 7: Machine learning results excluding Dublin and Belfast



C.4 Additional Regression Tables

Table 8: Barony-level donations: additional control variables

	(1)	(2)	(3)
Catholic share	22.0*** (6.9)	20.9*** (5.5)	24.8*** (7.8)
Literacy rate	60.5* (30.3)	63.4** (24.9)	54.6** (23.1)
Average age	1.49 (0.9)	1.07 (0.8)	1.08 (0.9)
Male-female ratio	-5.36 (16.6)	1.72 (14.3)	6.87 (14.3)
Single share	25.7 (37.6)	38.6 (29.4)	52.0 (35.6)
Farm laborer share	-45.0 (56.0)	-47.3 (51.5)	-47.4 (54.2)
Urban laborer share	-16.8 (70.1)	-13.7 (67.3)	-21.7 (69.9)
White-collar share	-24.9 (74.5)	-24.4 (71.9)	16.5 (75.0)
Skilled laborer share	-46.9 (63.2)	-61.3 (63.0)	-58.8 (62.9)
Farmer share	-51.6 (60.2)	-50.4 (56.5)	-60.6 (58.9)
Log land values	-1.68 (1.5)	-1.34 (1.3)	-0.70 (1.3)
Mean HH size	6.64 (6.0)	7.63 (5.0)	9.20 (5.5)
SD HH size	-2.62 (2.8)	-2.55 (2.8)	-4.32 (3.9)
Deported (1916) share	-403.5 (674.5)	-190.6 (171.0)	-252.3 (185.6)
Gaelic League branches	1.53** (0.6)	1.73*** (0.6)	1.25 (0.8)
Irish speaker share	-3.36 (8.8)	-2.13 (6.5)	-1.52 (6.4)
Famine blight measure	0.39 (1.7)		
SD Land Value		1.88 (1.7)	
Ag. laborer-to-Farmer ratio			-3.89** (1.6)
Constant	-113.7 (111.5)	-115.4 (80.9)	-120.8 (99.5)
R ²	0.26	0.24	0.25
Observations	246	325	331

Table reports the effect size measured in pounds per thousand of population.

Table 9: Constituency-level donations: additional control variables

	(1)	(2)	(3)
Catholic share	36.1*** (8.8)	35.4*** (8.1)	35.6*** (8.8)
Literacy rate	104.4*** (28.8)	107.0*** (26.9)	101.4*** (28.4)
Average age	1.13 (2.0)	1.28 (2.2)	1.08 (1.9)
Male-female ratio	19.0** (8.1)	19.7** (9.1)	19.7** (7.9)
Single share	90.2* (47.3)	99.9** (45.9)	87.5* (47.2)
Farm laborer share	-84.6* (47.6)	-93.4** (45.4)	-105.3** (51.0)
Urban laborer share	-47.0 (55.4)	-28.0 (63.0)	-67.2 (54.7)
White-collar share	-100.2* (57.6)	-92.0 (64.5)	-121.0** (59.1)
Skilled laborer share	19.2 (52.5)	31.0 (55.3)	-22.1 (40.7)
Farmer share	-50.3 (41.4)	-45.6 (42.0)	-75.2 (45.3)
Log land values	-4.08* (2.3)	-5.79** (2.3)	-3.20* (1.8)
Mean HH size	6.96 (5.3)	5.19 (5.5)	7.93 (5.4)
SD HH size	-0.49 (2.1)	-0.52 (1.8)	-0.30 (1.9)
Deported (1916) share	803.1 (648.3)	844.4 (591.1)	904.0 (661.0)
Gaelic League branches	-0.94 (0.9)	-0.28 (1.0)	-0.90 (0.9)
Irish speaker share	-6.01 (11.1)	-8.66 (10.5)	-7.30 (11.5)
Military share	-27.4 (77.0)		
SD Land Value		-1.78** (0.9)	
Ag. laborer-to-Farmer ratio			-1.61 (1.0)
Constant	-201.6 (120.0)	-211.9 (134.9)	-176.6 (109.1)
R ²	0.58	0.60	0.58
Observations	100	100	100

Table reports the effect size measured in pounds per thousand of population.