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## Leaving the church: A note on the 1843 disruption of the Church of Scotland

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Working Paper 2024-06

LEAVING THE CHURCH. A NOTE ON THE 1843  
DISTRUPTION OF THE CHURCH OF SCOTLAND

Joseph Paul and John W. Sawkins

April 2024

Keywords: Church, Scotland, 1843, Linear Probability  
Model

JEL: C21, N33, N93, Z12

# Leaving the Church. A Note on the 1843 Disruption of the Church of Scotland

Joseph Paul<sup>†</sup> and John W Sawkins<sup>‡</sup>

April 2024

## Abstract

This paper analyses the decisions made by ministers of the Church of Scotland regarding whether to leave and join the Free Church, or remain within the establishment, at the time of the 1843 Disruption. Using a newly constructed dataset drawn from a range of hitherto unconnected sources, it models the binary, stay or leave, decision through a linear probability model. The empirical results affirm the importance of age, type of church served and geographical context in explaining the overall pattern of secession. In addition they cast doubt on theories offering explanations which elevate the role of narrow economic concerns in driving the decision; explanations focusing on the impact of loss of stipend or family circumstances.

**JEL Codes:** C21, N33, N93, Z12

**Keywords:** Church, Scotland, 1843, Linear Probability Model

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## 1. Introduction

On 18 May 1843 a historic schism, known as the ‘Disruption’, fractured the Church of Scotland. On that day a group of ministers, opposed to the intrusion of the state into ecclesiastical matters, dramatically walked out of the Church’s annual General Assembly meeting. Led by the charismatic Rev Dr Thomas Chalmers they made their way through a large crowd from St Andrew’s Church on Edinburgh’s George Street to the nearby Tanfield Hall, where they signed an Act of Separation and Deed of Demission. By this they signalled their intent to leave the established Church, and with it all personal entitlement to salary (stipend), church and personal accommodation (manse). Out of the 1,195 clergymen of the Church of Scotland, 454 or 38.1% eventually joined the newly established Free Church of Scotland.<sup>1</sup>

In terms of its ecclesiastical, political and social impact, the 1843 Disruption was a pivotal moment in Scottish history. Not only did it push the country further down the road of institutional religious pluralism, it fuelled intense political debate over the question of the proper boundaries between, and the responsibilities of, church and state in relation to civic society. As Brown and Fry (1993) note,

The Disruption was the most important domestic event in Scotland during the nineteenth century. Scarcely a Scot, at home or overseas, can have been unaware of it, and many were profoundly affected in their daily lives. The course of Scottish history was permanently altered, while the ramifications spread through the United Kingdom and the British Empire. For decades, the Disruption formed the subject of intense, almost obsessive, debate among the Scottish people. It was seen as a struggle over principles that were fundamental to the idea of a Christian state and to Scotland’s national identity, and that involved the very nature of Christ’s sovereignty in the national Church of Scotland.<sup>2</sup>

Despite its historical significance, and a voluminous nineteenth and twentieth century literature, the scholarly spotlight has more recently shifted away from the Disruption of 1843.<sup>3</sup> There remain, however, aspects of the Disruption covered in previous accounts on which particular analytical methods might cast new light. One such being the factors underpinning the decisions of ministers choosing to leave the establishment and join the Free Church.

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<sup>1</sup> Brown (1982), 335.

<sup>2</sup> Brown and Fry (1993), viii-ix.

<sup>3</sup> Notable exceptions include Withrington (1993) and Brown (2012). A leading sociological study is Hillis (1993). It is telling, however, that the Disruption no longer features on Scottish Qualifications Agency (SQA) history examination syllabuses. See <https://www.sqa.org.uk/sqa/47923.html>

This paper's contribution to the existing literature is twofold. First, in the presentation of a newly constructed dataset, whose content comes from a range of contemporary historical sources, hitherto unconnected. Second, in the enrichment of existing historical narratives, through the deployment of that dataset to statistically model the decisions of ministers to join the Free Church of Scotland at the Disruption. Modelling this binary, stay or leave, decision through a linear probability model we analyse the factors underpinning the actions taken by Church of Scotland ministers at the Disruption. The empirical results thereby generated throw new light on the foundational question in studies of the Disruption; why did ministers leave the established Church to join the Free Church?

## 2. Historical Context

The events of 18 May 1843 were the culmination of a decade-long dispute over the question of whether the state had the right to exercise its jurisdiction within the established Church. The matter which crystallised the walk-out was a legal judgement settling the limits of this jurisdiction in relation to the ancient right of parish patronage;<sup>4</sup> the practice by which holders of the right, typically local landowners, would nominate a minister of their choice to a vacant parish. Judicial clarity was sought over whether congregations had the legal authority to reject or 'veto' a nominated minister. Within the Church rival factions took opposing sides in the debate. A group within the Church, known as the Evangelical party, led by Chalmers, supported the right of congregations to veto any minister presented by a patron. Opposed to this the rival Moderate party upheld the legal right of patrons to nominate and settle their choice of minister.

After protracted legal proceedings in the Scottish courts, an appeal to the House of Lords by supporters of the congregational veto was rejected, and the right of patrons to 'intrude' a minister of their choice on a congregation upheld.<sup>5</sup> Last minute attempts to secure a legislative solution to the impasse proved fruitless, and thus the die was cast, with a large number of ministers concluding that they must secede from, or leave, the established Church.

Whilst the factors that influenced ministers' decisions to leave were varied the decision was, ultimately, an individual one. At an individual level valuable insights into the way in which personal beliefs and circumstances combined to influence individual choices may be gleaned from surviving personal records such as diaries, correspondence, memoirs and biographies. Although possible with a large enough sample to draw general conclusions from studies of the individual decisions, analysis at a higher level of aggregation reduces the risk of giving undue weight to the decisions of individuals for whom

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<sup>4</sup> The majority of patronages were exercised by local landowners, the Crown or the magistrates and town councils of the larger towns and cities.

<sup>5</sup> Brown (1982), chapter six gives a detailed description of the events.

the biographical records are most complete, typically leaders taking opposing sides in the debate. Instead by analysing the decisions of the entire population of ministers of the Church of Scotland, a different insight into the biographical, economic, and geographical contours of the Disruption is possible. In this paper, therefore, we consider the decisions of the entire population of ministers, seeking to identify those quantifiable and observable factors most salient in explaining the decision to join the Free Church.

Within the existing literature contributions by Brown (1982), Cheyne (1999), Henderson (1943) and Withrington (1993) are outstanding scholarly works of the event, characterised by their breadth, rigour and balance. Amongst the most important analyses of the Disruption relating to a particular locality is MacLaren's (1974) seminal monograph examining the Disruption years in Aberdeen.<sup>6</sup> Within this he explores in detail the matters driving the decision to leave or adhere to the established Church, offering penetrating commentary on the influence of factors such as potential economic disadvantage, social ostracism and a hostile local press<sup>7</sup>. MacLaren (1974), as with Brown (1982), favours a qualitative analytical approach, covering unquantifiable factors such as ecclesiastical leadership, social and cultural norms.

By way of contrast quantitative analysis, the approach adopted in this paper, focuses more narrowly on the drawing out of empirical regularities based on summary statistics for observable and measurable phenomena such as age, location and type of church served. We therefore proceed under the assumption that these observable phenomena influenced the binary choice of whether ministers adhered to the established Church or left to join the Free Church. To this end a new dataset was constructed.

### **3. Data: Sources**

The biographical, economic and geographical data for this study were drawn from a number of authoritative church and government publications. The unit of analysis being the individual minister, the primary data source was Scott's 1923 edition of the *Fasti Ecclesiae Scoticae*. Successive editions of this publication contain the definitive record of every minister serving within the established Church of Scotland. Each entry contains biographical information including year of birth and ordination, marital status and the names of the parishes, presbyteries and synods in which the minister served. In some cases the names and ages of spouse and children are recorded. Critically, for the purpose of this analysis, all parish ministers serving within the church on the date of the Disruption are identified, together with a record of whether or not they joined the Free Church.

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<sup>6</sup> The case of Aberdeen is unique amongst Scottish cities in that all established Church ministers serving within its city churches left to join the Free Church.

<sup>7</sup> MacLaren (1974), 54-58.

Parish population data for this period are drawn from Corinne Roughley's work<sup>8</sup> to create new Scottish parish-level map frameworks in which are delineated pre and post 1891 parish boundaries. The associated database contains parish area information matched with parish population count data drawn from each census from 1801 to 1891, allowing population densities to be calculated. For the two largest urban conurbations, Edinburgh and Glasgow, parish population data are amalgamated. In these the parish areas within the city boundaries were subject to significant change during the early nineteenth century and the correspondence between parish population and parish church was unstable. In Edinburgh for example, the single city parish was served by fifteen churches staffed by eighteen ministers. It was common for individuals to work and attend church outwith the parish area in which they lived.

Data relating to ministerial stipend and church type were derived from three Parliamentary Papers: the *Ninth Report by the Commissioners of Religious Instruction, Scotland*, the *1850 Churches (Scotland)* and the *1866 Parish Ministers (Scotland)* Parliamentary returns. These record ministerial stipends, which for the majority of the clergy were paid by the holders of teinds (tithes), by voluntary donations, or by town and city magistrates. Within the Parliamentary returns each church is identified as belonging to one of three categories, quoad omnia parish churches, quoad sacra churches and city or burgh churches.

Quoad omnia churches, the majority, served parishes whose historic boundaries delineated areas within which ecclesiastical and civil jurisdiction coincided. Quoad sacra churches were those where ecclesiastical jurisdiction had been separated from the civil in order to meet the religious needs of a growing population. Thus within a single quoad omnia parish area, a population might be served by multiple quoad sacra churches. Between 1834 and 1841 a church extension campaign, led by Chalmers,<sup>9</sup> established over 200 of these new quoad sacra churches in Scotland's rapidly growing urban areas. Finally, city or burgh churches were those located in the largest towns and cities where responsibility for funding the provision and maintenance of the church building and associated ministerial stipend rested with the civic authorities.

Further information relating to the dataset is contained in the Appendix to this paper.

#### **4. Data: Analysis**

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<sup>8</sup> The full dataset together with a description of its construction and content is published by the National Records of Scotland and available at: <https://www.nrscotland.gov.uk/statistics-and-data/geography/our-products/other-national-records-of-scotland-nrs-geographies-datasets/historic-civil-parishes-pre-1891> [Consulted 4 April 2024]

<sup>9</sup> See Brown (1982) and Brown (1978).

Preliminary to a presentation of the approach adopted in modelling the binary choice made by ministers of the Church of Scotland at the Disruption, we explore some of the dataset's key features revealed through aggregate level descriptive statistics.

Table 1 presents summary statistics for the three key continuous variables – age, stipend and parish population density – for the entire dataset. Figures 1.1 to 1.3 present their distributions, with Figure 1.4 using a logarithmic scale to delineate more clearly population density. Ministerial ages ranged from 22 to 94, with a mean of just over 49 years. For stipend, of the 33 ministers enjoying stipends in excess of £400 p.a., twenty-one served churches in the city of Edinburgh, ten served in Glasgow, one in Aberdeen and one in St Andrews. The highest stipends of just over £548 p.a. were all earned by ministers of Edinburgh's prestigious burgh churches. At the other end of the spectrum the twenty ministers on the lowest stipends of under £100, although poorly paid in comparison, would generally be able to secure modest local supplements or, in the case of rural parishes, additional income from a glebe, either through produce grown or rent. The most densely populated areas were the large cities, with Glasgow and Greenock having the highest recorded population density of over 3000 people per square kilometre.

In Table 2 summary statistics based on data disaggregated according to whether a minister remained in the Established Church or joined the Free Church. Notable is the lower mean age of those joining the Free Church and the higher mean population density of their parishes. For stipend, the range and mean are similar. In Table 3 the count of those married, serving quoad sacra and burgh churches is recorded. As a proportion of the disaggregated data it is notable that a much greater number of ministers in quoad sacra charges joined the Free Church. A similar, but less pronounced, pattern is true for the burgh churches, however there is little difference in the proportions of those married on the date of the Disruption.

Turning to the geographical contours of the ministerial exodus, Figure 2 offers a visual analysis of the proportion of ministers joining the Free Church by presbytery area. Aggregating individual ministerial data at presbytery level and looking at the two ends of the distribution, we note that amongst the twenty presbyteries with the highest percentage of ministers remaining in the Church of Scotland just under half were in the south of the country. Amongst the twenty presbyteries with the highest percentage of ministers joining the Free Church of Scotland half were located above the Highland line.

## **5. Empirical Modelling and Results**

Whilst the decision of ministers either to adhere to the Established Church or to leave and join the Free Church was ultimately an individual and personal one, the aim of the empirical analysis is to identify



those observable characteristics across the ministerial population on which quantitative data is available, which have greatest explanatory power in terms of the choice made.

Given a choice variable - joined Free Church - which is inherently binary, a linear probability modelling framework is selected to analyse the decisions of individual ministers. The standard linear probability model (LPM) deployed is a linear multiple regression model applied to a binary dependent variable.

Thus

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \dots + \beta_k X_{ki} + u_i$$

Where  $Y$  is the binary dependent variable and  $E(Y | X_1, X_2, \dots, X_k) = \Pr(Y=1 | X_1, X_2, \dots, X_k)$ .

Hence,

$$P(Y = 1 | X_1, X_2, \dots, X_k) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k$$

An LPM modelling approach uses ordinary least squares to estimate regression coefficients, with the conventional heteroskedastic-robust OLS standard errors used to derive confidence intervals. Table 6 records the results. The binary dependent variable takes the value of one in the cases where a minister joined the Free Church.

Models 1 and 2 include variables relating to age, stipend and population density, with the former having just one dummy variable relating to marital status, and the latter adding in dummies relating to church type. Model 3 adds presbytery location controls (dummy variables) to the specification.

As part of the modelling process a robustness check was carried out through implementing an alternative nonlinear probit regression model to re-estimate marginal effects. The results of this were similar however, and it was therefore concluded that the benefits of capturing non-linearity with the probit did not outweigh the advantages of simplicity and interpretability offered by the LPM.<sup>10</sup>

The results may be summarised as follows. Age has a negative, statistically significant, and consistent coefficient across all models, implying that younger ministers had a greater propensity to join the Free Church. In addition both log Population Density and the Quoad Sacra dummy variables have positive and significant coefficients across model specifications. In contrast the coefficient on log Stipend whilst

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<sup>10</sup> Results available from the authors.

consistently negative is only significant at the 10% level in the first model and does not therefore present as a key driver of the decision to leave. Neither are the Married nor Burgh designations. The results are consistent, therefore, with hypotheses suggesting a higher probability of joining the Free Church for younger ministers, those serving quoad sacra churches and those located in parishes with a high density of population. In contrast neither the level of stipend nor marital status have significant explanatory power within the model.

These results are consonant with Brown's (1982) analysis in which he noted the greater tendency of young ministers serving in unendowed quoad sacra churches to join the Free Church. This, he linked to the rise of the Evangelical party within the Church of Scotland during the 1830s and early 1840s, led by Chalmers, noting, "younger men, ordained to the ministry during the years of Evangelical ascendancy, had a greater tendency to go out."<sup>11</sup> Furthermore the concentration of seceding ministers in the quoad sacra churches may be explained by the fact that ministers ordained during the 1830s would have been seeking their first clerical appointment at the time of Chalmers's church extension campaign, which succeeded in establishing large numbers of quoad sacra churches.

The new quoad sacra churches, funded through voluntary contributions, were located in areas of high population density, the larger towns and cities. In these areas the fear of economic insecurity for ministers joining the Free Church,<sup>12</sup> through loss of stipend, would have been attenuated in two ways. First if it were believed that significant latent capacity to raise money through voluntary giving existed. A voluntary financing device of the period was the charging of pew or seat rents – a charge levied for the right to occupy particular seats during Sunday worship. This was extensively practiced in towns and cities, but generally not a feature of rural parish life.<sup>13</sup> Second a further feature of urban areas was the greater availability of accommodation, both public halls and private houses, that might be rented or purchased to meet the needs of seceding congregations and ministers in the short run. In the rural areas, in contrast, there were not only fewer suitable buildings, but a greater concentration of control over buildings and land in the hands of a relatively small number of individuals. It was therefore possible for hostile landowners to effectively deny access to those it wished to exclude. Thus, whilst loss of stipend was clearly a concern for ministers, most especially those married with families, more critical was the context within which this took place. Or to put it more plainly, the risk to economic security was potentially greater in the rural rather than the urban areas.<sup>14</sup>

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<sup>11</sup> Brown (1982), 335.

<sup>12</sup> MacLaren (1974), 56, notes, for example, how the fear of economic insecurity through loss of stipend might act to deter those considering withdrawing from the Establishment.

<sup>13</sup> See Sawkins, J.W. (2023).

<sup>14</sup> Brown, T. (1893) for a rich description of the experience of ministers serving urban and rural parishes at the time of the Disruption.

It is important to note, however, the limits of this modelling approach in capturing the key dimensions of an individual decision shaped by many factors. Perhaps most critical is the unquantifiable effect of doctrinal or theological disposition which varied across the country.

For example, attachment to traditional Calvinistic tenets was most pronounced in the northern Highlands where, as Brown (1982) notes,<sup>15</sup> the area had experienced a series of evangelical revivals in the 1840s which had reinforced a strict Highland Calvinist piety, and which in turn further bound together those communities who traced their suffering to the time of the Highland clearances. Consequently, although people living in economically poor, and sparsely populated rural areas were more remote from the theological and political contentions of the previous decade, they were, by virtue of their theology, sympathetic to the Evangelical party's cause. Hence in many of these areas a high proportion of ministers and congregants joined the Free Church. Whilst this variation is picked up through the use of location controls in the modelling, potential remains to move beyond the limits of the current modelling approach to tease out further the complex interaction between theology, economics and geography.

## **6. Conclusion**

In conclusion we return to the foundational question of the Scottish Disruption; why did ministers join the Free Church? In modelling the binary choice of ministers the results of this paper affirm the importance of age, type of church served and geographical context in explaining the pattern of secession. In addition they cast doubt on theories offering explanations which elevate the role of narrow economic concerns in driving the decision; explanations focusing on the impact of loss of stipend or family circumstances. The way stands open, therefore, for further work exploring how various dimensions of the context within which individual ministers lived and worked affected their decision to adhere to the establishment or join the Free Church of Scotland.

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<sup>15</sup> Brown (1982), 335.

## References

- Anderson, M. and Roughley, C., 2018. *Scotland's Populations from the 1850s to Today*, Oxford University Press, Oxford.
- Brown, S.J., 1978. The Disruption and Urban Poverty: Thomas Chalmers and the West Port Operation in Edinburgh, 1844 – 47, *Records of the Scottish Church History Society*, XX, 1, 65-89.
- Brown, S.J., 1982. *Thomas Chalmers and the Godly Commonwealth in Scotland*, Oxford University Press, Oxford.
- Brown, S.J. 2012. 'Religion and Society to c.1900', chapter 4 in Devine, T.M. and Wormald, J., (eds). *The Oxford Handbook of Modern Scottish History*, Oxford University Press, Oxford.
- Brown, S.J. and Fry, M., eds, 1993. *Scotland in the Age of the Disruption*, Edinburgh University Press, Edinburgh.
- Brown, T., 1893. *Annals of the Disruption, New Edition*, Macniven and Wallace, Edinburgh.
- Cheyne, A.C., 1999. *Studies in Scottish Church History*, T&T Clark, Edinburgh.
- Henderson, G.D., 1943. *1843, Heritage. A Study of the Disruption*, Oliver and Boyd, Edinburgh.
- Hillis, P.L.M., 1993, 'The Sociology of the Disruption', in Brown, S.J. and Fry, M., eds, *Scotland in the Age of the Disruption*, Edinburgh University Press, Edinburgh, 44 – 62.
- MacLaren, A. A., 1974, *Religion and Social Class. The Disruption Years in Aberdeen*, Routledge and Kegan Paul, London.
- James McCosh 1843, *The Wheat and Chaff Gathered into Bundles; a statistical contribution towards the history of the recent disruption of the Scottish ecclesiastical establishment*, Perth.
- Parliamentary Papers 1839, *Ninth Report by the Commissioners of Religious Instruction, Scotland*. W. & A.K. Johnston, Edinburgh.
- Parliamentary Papers 1850, *Churches (Scotland)*, 311.
- Parliamentary Papers 1866, *Parish Ministers (Scotland)*, 117.
- Sawkins, J.W., 2023. The Financing of Ministerial Stipends in the Established Church of Scotland: The Rural Parish. *The Journal of Ecclesiastical History*, 74(3), 535-570.
- Scott, Hew, (ed) 1923. *Fasti Ecclesiae Scoticae. The succession of ministers in the Church of Scotland from the Reformation. Volumes 1 - 8*. Oliver and Boyd, Edinburgh.
- Withrington, D.J., 1993. The Disruption: A Century and a Half of Historical Interpretation, *Records of the Scottish Church History Society*, 25, 118-153.

## Appendix

### Data Sources and Variable Derivation

Data Category Description	Variable Name	Source: Variable Derivation
<b>Biographical</b>		
Name	-	Fasti: Minister's name
Age	Age	Fasti: Calculated as 1843 – year of birth
Joined Free Church	-	Fasti: Dependent variable, 1 = joined Free Church
Marital Status	d Married	Fasti: Dummy variable, 1 = married (not widower) and spouse alive on 18 May 1843
<b>Economic / Geographical</b>		
Parish	-	Fasti: Parish name
Synod Area	d Synod	Fasti: Categorical variable coded 1 – 16.
Presbytery Area	d Presb	Fasti: Categorical variable coded 1-82
Quoad Sacra Church	d QSacra	PP 1839: Dummy variable, 1 = Quoad Sacra Church
Burgh Church	d Burgh	PP 1866: Dummy variable, 1 = (Royal) Burgh Church
Stipend	Stipend	PP 1839, PP 1850: Stipend (converted from £sd to £decimal)
Population Density	Population Density	Anderson and Roughley: Parish population density per square km for census year 1841.

#### Sources (Abbreviations):

Anderson and Roughley: Anderson, M. and Roughley, C., 2018. Scotland's Populations from the 1850s to Today, Oxford University Press, Oxford.

Fasti Scott, Hew, (ed) 1923. Fasti Ecclesiae Scoticae. The succession of ministers in the Church of Scotland from the Reformation. Volumes 1 - 8. Oliver and Boyd, Edinburgh.

PP 1839 Parliamentary Papers 1839, Ninth Report by the Commissioners of Religious Instruction, Scotland. W. & A.K. Johnston, Edinburgh.

PP 1850 Parliamentary Papers 1850, Churches (Scotland), 311.

PP 1866 Parliamentary Papers 1866, Parish Ministers (Scotland), 117.

McCosh James McCosh 1843, The Wheat and Chaff Gathered into Bundles; a statistical contribution towards the history of the recent disruption of the Scottish ecclesiastical establishment, Perth.

#### Notes:

##### Biographical Information.

The names, ages, marital status of ministers, together with their decision whether or not to join the Free Church are taken from Fasti 1923.

Included are those ordained and admitted to a parochial charge.

Excluded are Missionaries and Ministers in university appointments (whose working and remuneration arrangements differed from those of parish ministers), Assistant and Successor ministers (only the senior minister within a particular parish is included).

#### Economic / Geographical Information

The names of parishes, presbytery and synod area are taken from Fasti 1923.

Designations as a Burgh or Quoad Sacra church are taken from PP 1839 and PP 1866.

Stipend data taken from PP 1839 and PP 1850.

Parish population density figures (persons per square kilometre) are taken from National Records of Scotland: <https://www.nrscotland.gov.uk/statistics-and-data/geography/our-products/other-national-records-of-scotland-nrs-geographies-datasets/historic-civil-parishes-pre-1891> [Consulted 4 April 2024]. See also Anderson and Rougley 2018.

#### Modelling Assumptions.

Dummy Variables, denoted  $d$ , are binary categorical variables taking values of 1 or 0.

Parishes noted in Fasti 1923 as vacant on 18 May 1843 are excluded.

For Edinburgh and Glasgow, parish population density figures used are the mean population densities across the respective cities.

Stipend of the closest neighbouring parish are used in cases where stipend observations are missing.

**Table 1: Summary Statistics Continuous Variables (Aggregated)**

Variable	Observations	Min	Max	Mean	Std Dev
Age (years)	1161	22	94	49.18	13.83
Stipend (£)	1195	50	548.22	216.89	73.87
Parish Population Density (people per km <sup>2</sup> )	1195	1.86	3735.65	330.30	780.43

**Table 2: Summary Statistics Continuous Variables (Disaggregated)**

Variable	Remained in Established Church					Joined Free Church				
	Obs	Min	Max	Mean	Std Dev	Obs	Min	Max	Mean	Std Dev
Age	722	22	94	51.94	14.26	434	23	84	44.50	11.73
Stipend	722	50	548.22	216.75	65.96	434	70	548.22	218.73	86.12
Parish Population Density (people per km <sup>2</sup> )	722	1.98	3745.65	199.23	582.05	434	1.86	3745.65	523.41	950.66

**Table 3: Summary Categorical Variables (Disaggregated)**

	Remained in Established Church	Joined Free Church
Married	459 / 719 (63.8%)	270 / 434 (62.2%)
Quoad Sacra Minister	47 / 722 (6.5%)	77 / 434 (17.7%)
Burgh Minister	65 / 722 (9.0%)	58 / 434 (13.4%)

**Table 4: Synod Areas**

<b>Synod</b>	<b>Number</b>	<b>Synod</b>	<b>Number</b>
Aberdeen	1	Lothian and Tweeddale	9
Angus and Mearns	2	Merse and Teviotdale	10
Argyll	3	Moray	11
Dumfries	4	Orkney	12
Fife	5	Perth and Stirling	13
Galloway	6	Ross	14
Glasgow and Ayr	7	Shetland	15
Glenelg	8	Sutherland and Caithness	16

**Table 5: Presbytery Areas**

<b>Presbytery</b>	<b>Number</b>	<b>Presbytery</b>	<b>Number</b>
Aberdeen	1	Lewis	42
Alford	2	Locharron	43
Deer	3	Skye	44
Ellon	4	Uist	45
Fordyce	5	Biggar	46
Garioch	6	Dalkeith	47
Kincardine O'Neil	7	Dunbar	48
Turriff	8	Edinburgh	49
Arbroath	9	Haddington	50
Brechin	10	Linlithgow	51
Dundee	11	Peebles	52
Fordoun	12	Chirnside	53
Forfar	13	Dunse	54
Meikle	14	Jedburgh	55
Dunoon	15	Kelso	56
Inverary	16	Lauder	57
Isla and Jura	17	Selkirk	58
Kintyre	18	Aberlour	59
Lorn	19	Abernethy	60



Mull	20	Elgin	61
Annan	21	Forres	62
Dumfries	22	Inverness	63
Langholm	23	Nairn	64
Lochmaben	24	Strathbogie	65
Penpont	25	Cairston	66
Cupar	26	Kirkwall	67
Dunfermline	27	Northern Isles	68
Kirkcaldy	28	Auchterarder	69
St Andrews	29	Dunblane	70
Kirkcudbright	30	Dunkeld	71
Stranraer	31	Perth	72
Wigtown	32	Stirling	73
Ayr	33	Weem	74
Dumbarton	34	Chanonry	75
Glasgow	35	Dingwall	76
Greenock	36	Tain	77
Hamilton	37	Burravoe	78
Irvine	38	Lerwick	79
Lanark	39	Caithness	80
Paisley	40	Dornoch	81
Abertarff	41	Tongue	82

**Table 6: Linear Probability Models**

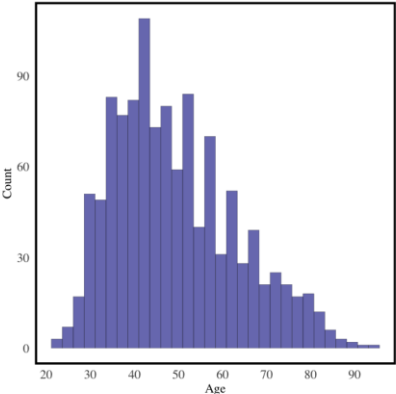
	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3 (with Presbytery Location Controls)</b>
Intercept	0.952*** (0.229)	0.583* (0.270)	0.784* (0.328)
Age	-0.007941*** (0.000919)	-0.007798*** (0.000923)	-0.009159*** (0.000962)
Log Stipend	-0.0812 <sup>+</sup> (0.0441)	-0.00899 (0.05109)	-0.0218 (0.0555)
Log Population Density	0.05928*** (0.00831)	0.0476*** (0.0092)	0.0469** (0.0150)
d Married	0.00949 (0.02817)	0.0105 (0.0280)	0.00548 (0.02742)
d QSacra		0.184*** (0.051)	0.1096* (0.0535)
d Burgh		0.0431 (0.0493)	0.0294 (0.0509)
Number of observations	1152	1152	1152
R <sup>2</sup>	0.108	0.119	0.239
Adjusted R <sup>2</sup>	0.105	0.115	0.177

Note:

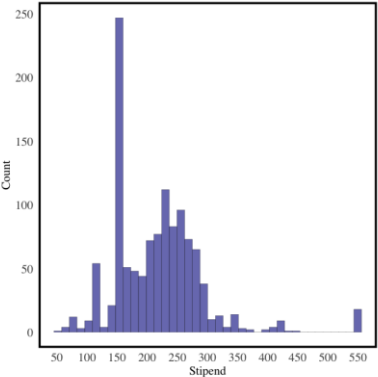
Heteroscedastic-robust standard errors.

<sup>+</sup> p < 0.1, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001

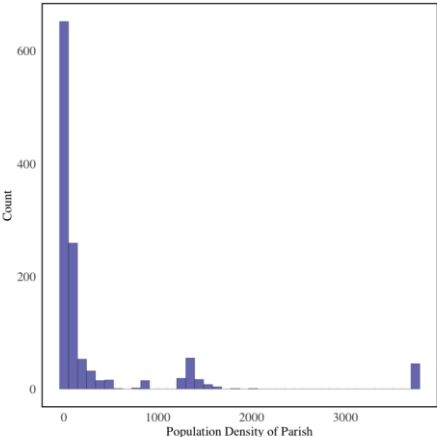
**Figure 1.1: Distribution of Continuous Variables Age**



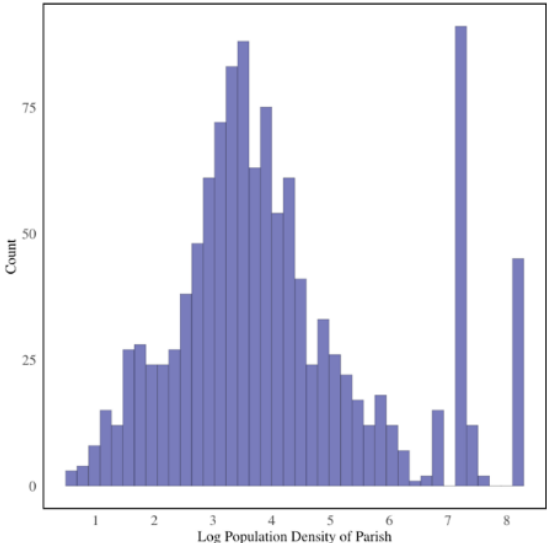
**Figure 1.2: Distribution of Continuous Variables Stipend**



**Figure 1.3: Distribution of Continuous Variables Population Density**



**Figure 1.4: Distribution of Continuous Variables Log Population Density**



**Figure 2: Proportion of Ministers Adhering to the Established Church and Joining the Free Church by Presbytery**

