2024 UK General Election manifesto commitments: implications for the economy, environment, and society

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Additional Declarations: The authors declare no competing interests.

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Abstract

In July 2024, the UK will have a general election and elect a new government. The election campaign is filled with claims and counterclaims about what different parties will do. The promises made in political manifestos are a key part of this claim-making, and the wider electoral processes which aid voters in making their decisions. Manifestos can be an important part of people's decision making and are one way in which the elected government is then held to account. However, the level of detail varies across manifestos, and the accuracy of costings and other information is hotly contested. This work assesses the pledges made in manifestos using a complex system modelling approach, identifying how different pledges interact to predict how each party's policies would change the political, economic, environmental, and social landscapes of the UK. The outcomes show that more radical ideas are proposed by the smaller parties. The Greens and Liberal Democrats deliver better environmental, social and public services outcomes. Reform UK are predicted to cut average living standards (despite tax cuts) and perform poorly on the environment and many public services such as the NHS, but likely to reduce crime. The Labour and Conservative parties have policies which mainly are predicted not to deliver to the same magnitude as the Greens, Liberal Democrats and Reform (as indicated above). However, Labour are more aligned in most cases to publicly favourable outcomes than the Conservatives. While no party is a clear 'winner' in terms of policies, this work compares outcomes across the different parties and may result in better informed decisions being made at the ballot box.

1. Introduction

In late May 2024, the current [at the time of writing] Prime Minister of the UK, Rishi Sunak, announced a surprise general election in early July. Policies from all political parties have slowly emerged, resulting in the major political parties releasing their election manifestos in mid-June 2024. Prior, and immediately following these releases, pledges are scrutinised by opposing parties and media, with significant disagreement about what they would, or would not achieve - all manifestos claim to be 'fully costed'.

The UK political landscape is complex, with multiple interconnected components, essentially forming a complex system (Cairney 2012; Arthur 2018). While there are some clear political and

societal outcomes (such as health, cost of living, crime rates, the environment and immigration); alongside clear policy levers (such as taxation, spending and legislation) understanding the pathways from policy levers to outcomes is complex and involves interplay between economic, environmental and social systems, amongst others. This study endeavours to assess the economic, social and environmental outcomes following the implementation of each of the major political parties' manifestos.

Stafford et al. (2020) produced complex system models, based on modified Bayesian belief networks, which examine the implications of key policies on environmental outcomes. Prior to publication, these models were tested against environmental pledges in the 2019 UK political party manifestos (Stafford et al. 2019). While these models were used to assess environmental outcomes, they were more holistic in their approach, including multiple factors relating to economic growth and socio-economic inequity, as these can often not be separated from environmental concerns.

This study therefore has two aims. Through an examination of political party manifestos, we will:

1. Re-run the environmental models presented in Stafford et al. (2020) to evaluate the likely contribution of political party environmental policies to the environment.
2. Widen the scope of the model to include the wider political landscape in the UK, and assess the manifesto promises of political parties to this wider economic and social landscape.

2. Methods

This study uses two distinct models. The model of the environmental policy landscape used in Stafford et al. (2020) (herein the ENV model) is used to predict environmental outcomes of political manifesto pledges, using an existing, peer reviewed model. The results are compared to the wider societal model (herein the FULL model) to provide some validation of the FULL model, but this model also predicts wider political, economic, social outcomes. Both models are based on modified Bayesian belief networks (BBNs) following the procedures in Dominguez Almela et al. (2024).

BBNs are methods to help understand and predict outcomes of complex systems. Complex systems can be thought of as a series of 'nodes' which here represent policies or outcomes of policies, and 'edges' which connect the nodes through direct cause and effect interactions. When initial or 'prior' values of nodes are changed (i.e. a node for income tax is changed to represent a cut in income tax as a political policy), this chance propagates through the network (via edges), changing values of interacting nodes (resulting in 'posterior' values). Complex outcomes can arise from the network as multiple cause and effect relationships are likely to exist for any given node. For example, a 'policing' node has a direct causal effect on a 'crime rates' node, but is unlikely to be the only node affecting crime (e.g. cost of living, inequality may all effect crime). Direct cause and effect interrelationships are represented in the model by positive or negative values (edges) that have been estimated between 1 and 4. These values arise from well-established evidence that directly links policies or services and outcomes (or directly links different nodes in the network). Positive values are recorded where: as one policy or service increases - the outcome also increases (this is a positive edge). Negative values are shown where a policy or service node increases and the affected node decreases. The value 1

indicates a weak relationship, and the value 4 indicates a strong relationship, as per Dominguez Almela et al. 2024).

2.1 Overview of the wider societal (FULL) model

The FULL model represents a simplified version of the political, economic, social and environmental landscape of the UK. The temporal aspect of the model represents around 5 years (or a single political term in office). The economic processes, which underly and interact with all other processes, are modelled through various forms of taxation (inflows to the budget) and spending (outflow). If our modelled outflows exceed inflows then deficits arise through negative values in the 'Treasury Funds' node (although we do not present an 'accounting model' here, with values representing increases or decreases from the current situation). Deficits do not feed back into our model to increase taxation or reduce spending, but financial markets, especially the bond market, can be negatively affected by deficits, lowering expectations that the government will be able to finance or repay deficits in the future (Peppel-Srebrny 2021). Financial markets can also be affected by increases in some forms of taxation, nationalisation, and inflation, but respond positively to increased private investment, increases in income and employment (Hendershott 1985; Ghosh and Clayton 2006). Economic growth (here defined as a percentage of GDP) can be boosted by financial markets, investments in utilities, transport and private investment, and (directly) limited by some forms of taxation. However, the model represents a complex, interacting system, so for example, while income tax rises may not directly affect economic growth, they may lower disposable income (although see results below for alternative scenarios), leading to reduction in economic growth as an indirect effect. Equally increasing budget deficits may have less effects on financial markets, if used for spending which leads to greater private investment, for example (Peppel-Srebrny 2021).

The model also considers key social concerns such as housing, transport, water and sewage, employment and apprenticeships, policing, health and well-being (including the NHS), cost of living, legal immigration and asylum / refugees, the environment (including climate and biodiversity), agriculture and pensions. Again, all of these are part of a complex system interacting with the economic aspects of the model.

2.2 Building the model

Policies and services (network nodes) and the direction and strength of their relationships with outcomes (edges, and edge strengths) were determined through collaborative discussion with the majority of the paper's authors who have collective expertise in complex systems models, political science, policy, environmental science, political and human geography, and health. To help justify the strengths and directions of these relationships, a sensitivity analysis on edge strengths was conducted using the BBNet package in R (Dominguez Almela and Stafford 2024); the 40 edge strengths (~ 10% of the total) with the highest cumulative impact on the nodes 'Crime', 'Carbon', 'Inflation', and 'Illegal immigration' were checked in the literature (see sensitivity analysis procedure in Dominguez Almela et al. 2024 for full details). All but one of these 40 nodes remained unaltered after justification in the literature, illustrating that the group discussions had created a robust model (Supplementary material 1).

The interaction grid of the model is available to download (Supplementary material 2) and is summarised in Figure 1.

Figure 1. Interaction diagram of the Bayesian belief network, demonstrating complex interactions between nodes (positive interaction: black arrows; negative interaction: red arrows) and between different categories of node (Taxation and employment: grey, Training and education: tomato red; Health and wellbeing: gold; Economy and income: white; Environment: blue; Political landscape: green).

2.3 Creating scenarios based on political party manifestos

Scenarios are the mathematical representation of the political party manifestos as a series of scores (or prior values) for nodes which are represented by manifesto policies. The scenarios for both the FULL and ENV model were created from the political manifestos of major political parties operating across all of England, Wales, and Scotland (Conservatives, Labour, Liberal Democrats, Green, Reform UK). Parties only standing in devolved nations were excluded, partly for the simplicity of the model, but also because some manifestos (e.g. SNP in Scotland) were

released later than the other parties. The Reform UK manifesto (or contract, as it is referred to, was based on the draft version available online w/c 10th June 2024).

Unlike the majority of models used with the BBNet package, many of the model nodes in the current study were both input and output nodes (i.e. they would form the basis of prior values, but these prior values should also change to reflect positive and negative feedback caused by interactions between nodes). As such, nodes for each of the five political party manifestos were added to the model as scenario nodes, and for example, to examine the Conservative party manifesto, a prior was set of 'Conservative' to value +4 with all other node values assigned prior values of 0.

The scenarios were defined in strength and direction by examining manifesto pledges on direct action and clarity of detail explicit in the manifesto. For example, a pledge to better fund the NHS with no further information may result in a value of +1 being given for the NHS node in the scenario. Whereas, a commitment to improve annual funding by £28 billion (~17% of the total budget, as described by the Green Party) would be given a value of +4. However, nodes are only changed with direct targeted action. For example a statement reading: "£10 billion extra per annum will be provided to the NHS to improve health and well-being of the UK population" would only result in changes to the NHS node. The BBN modelling process would be used to determine changes to health and well-being as a result of the changes to the NHS. Interaction scores were assigned as per the recommendations outlined in Dominguez Almela et al. (2024). The scores for each scenario along with a full definition of what each node represents are shown in Table 1. Justifications of the scores from the manifestos are also provided (Supplementary material 3).

Table 1. Nodes used in the model, with definitions applied and 'prior' values for each scenario or each political manifesto

Node	Definition	Green	Reform UK	Liberal Democrat	Conservative	Labour
Taxation and Employment						
Income Taxation	Total income from all taxation on wages/pensions etc including national insurance	3	-2	-2	-1	1
Green Taxation	Taxation on polluting things such as fuels (i.e., coal), or on products which damage biodiversity	2	-3		-1	
Corporate Taxation	Taxation on large businesses profits		-2	2		-1
Windfall Taxation	Specific tax on fossil fuel companies - or other highly harmful environmental industries	2		2	1	3
VAT	Amount of VAT paid	-1	-2		-1	
Employment	Number of people in full-time or part-time employment			1		1
Public Sector Pay	Average pay in public sector work			-1		
Green Jobs	Jobs in green industries, i.e., working with nature, retrofitting houses, producing renewable energy	3	-3			3
Zero Hour	Proportion of employment on 0 hours contracts	-1	2	-2		-4
Average Income	Mean income across working population (after taxation)	2			1	1
Training and Education						
Apprentices	Increasing apprenticeship schemes	2	2	3	2	3
Schools	Performance of schools - more money will increase performance, as would fewer students or more teachers etc	1	0	2	1	2
Universities	Performance and funding of universities through teaching and research	2	-3	2	-2	1
Skills Gaps	Lack of supply for certain skilled professions			-1	-2	
Health and Wellbeing						
NHS	Performance and funding of NHS	4	1	2	2	1
Health and Wellbeing	A general 'wellness' index, based on physical and mental health	2	-1	2		2
Social Care	Performance and investment in social care	4	-1	2	2	1
Youth Clubs	Availability of youth clubs and similar schemes					2
Private Health Care	Health care not provided through the NHS		3	-1		1
Child Care	Provision and cost of childcare	4	0	1	3	2
Crime	Illegal activity	-1	-2		-1	-2
Economy and Income						
Economic Growth	Increase in Gross Domestic Product (GDP)					1
Inflation	General increase in the cost of buying things; a change in the purchasing value of money					
Financial Markets	Confidence of financial markets	-3				2
Inequality	Discrepancy in wealth between richest and poorest	-2	1			-2
Quantitative Easing	Printing money to add to UK economy	2	-2			
Private Investment	Investment from non-government sources	2	2	2	1	4
Pensions	Average pension amount (after taxation - also see average income)			3	2	1
Benefits	All benefits, including disability benefits, universal credit etc.	3	-2	2	-2	
Cost of Living	General costs of goods and ability to afford them			-1		-2
Treasury Funds	Money in from tax vs money out from expenditure			1	1	1
Environment						
Carbon	A net carbon figure for UK activities	-3	4	-3	1	-2
Biodiversity	Overall biodiversity and nature levels in the UK	3	-3	4		1
Pollution	Pollution of rivers, land, air and seas	-2	2	-3	3	
Agriculture	Amount of agriculture in the UK - note, works on traditional agricultural practices - 'green' agriculture should also result in changes to other nodes	-1	2	1	2	1
Fishing	Amount of fish and seafood caught in the UK	-2	2	-1	1	
House Building	Schemes to increase housing, including affordable housing	3	2	4	4	4
Road	Investment and use of roads. Note - busses likely to reduce overall road use	-3	3	-2	3	3
Rail	As above, but with railways and trains	3	-1	3	1	2
Water and Sewage	Effective functioning of water companies	3	1	4		1
Political Landscape						
Nationalisation	Public ownership of some utilities	3	2	1		2
Judicial Changes	Changes to legislation especially around classifications of crimes and prosecution	-1	3		2	3
Police	Performance and size of the police force		3	1	1	2
National Security	Security from international risks, including size and investment in military		2	2	2	2
Refuges	Refugees and asylum seekers - non-regulated entry to country	2	-2	1	-1	-2
Legal Immigration	Regulated entry to country	3	-2	2	-2	-2
Foreign Aid	Total money provided for foreign aid	3	-3	1		1
National Service	Conservative scheme for military and social volunteering				2	

2.4 The Environmental model

The environmental model is identical to that described in Stafford et al. (2020), apart from changing the convention for node and edge strength to fit the BBNet package. Probability values ranging from 0 to 1 in the previously published model were converted to the -4 to 4 integer scale as per the conversion table in Dominguez Almela et al. (2024). The model closely evaluated the effects of environmental policies and economic growth, but did not contain full details of all taxation, and other aspects of the political and economic landscapes. However, unlike in 2020, the 'land demand' node was altered based on housing policy in manifestos. The full model is provided in Supplementary material 4.

2.5 Running models

Models were run using the BBNet package (Dominguez Almela and Stafford, 2024) on R version 4.3.2 (R Core Team 2023). The bbn.predict function was used to collate posterior values for each of the nodes. Values for all nodes were ranked by political party before presenting, as per Sokolnicki et al. (2022). Ranks ranged between 1 and 5, with 5 representing the party with the 'best' outcome for that particular node. The 'best' outcome is clearly subjective, and our ranking is based on what is assumed to be a popular outcome. For example, most voters would welcome lower taxation, but would rather a better performing NHS. More controversial ranking, such as that for immigration, is discussed below.

3. Results and Discussion

3.1 Environmental outcomes and comparison of these outcomes between models

The results from the environmental model and the full model closely match each other despite using different prior input variables. From the environmental model, the Green Party manifesto provided the highest benefits for the environment (from the environmental model), closely followed by the Liberal Democrat manifesto (Figure 2). However, these benefits were largely reversed in the full model, with the Liberal Democrat manifesto providing the best environmental outcomes. This is likely a result of the strong commitment to biodiversity in the Liberal Democrat manifesto, as well as the strong economic growth scores found in the full model for the Green Party. These economic growth figures for the Green Party are an emergent property of the non-environmental parts of the model, and not noted as intended in the manifesto, hence are not present as a 'prior' value in the environmental model. Other than these discrepancies between the top ranked position for environmental variables, the models compared well. Liberal Democrat and Green policies can be seen to be the best solutions for environmental protection, with Conservative and Reform policies performing poorly.
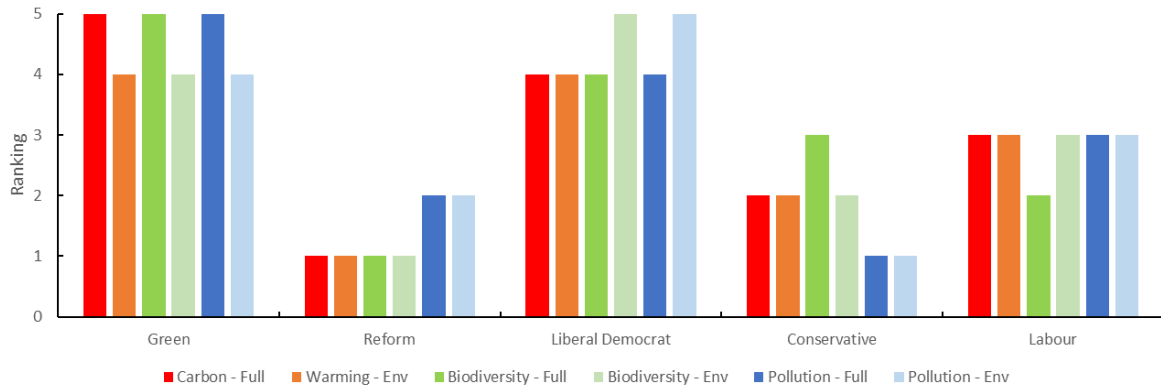
Figure 2. Environmental outcomes for climate (carbon node in FULL model, warming node in ENV model), biodiversity and pollution from the ENV model and the FULL model. Scores are ranks based on a reduction in carbon, increases in biodiversity, and reduction in pollution.

3.2 Results of the full model

To identify which party generates the best (ranked score of 5) and worst outcomes (ranked score of 1) from their proposed policies, the ranked values from each of the 48 nodes were counted and presented as histograms (Figure 3). Nodes for the Green Party manifesto and Reform UK's manifesto showed high counts of nodes ranked as 1 or 5. Table 2 presents the ranking 'order' for each node, generally considered as 'positive' outcomes for each node.

An important caveat is that this ranking order is highly subjective. For example, the Green Party are clear that they do not wish to limit numbers of refugees, asylum seekers, and legal migrants. While the policies result in the worst performance to 'reduce immigration' of all the political party manifestos, this is very much a value judgement, and the score of 1 here needs to be interpreted in context. Nevertheless, the larger number of posterior nodes ranked as 1 and 5 for Green's and Reform (and to some extent the large number of 2 and 4 scores for the Liberal Democrats) do indicate greater divergence of policies from those of the other parties which can be thought to 'occupy the middle ground'. The Labour histogram is slightly skewed towards higher rankings compared to the Conservative histogram, and as such, it is likely the Labour manifesto provides policies which would resonate more with the general public than the Conservative manifesto (again, subject to the value judgements provided for the order of ranking provided in Table 2).
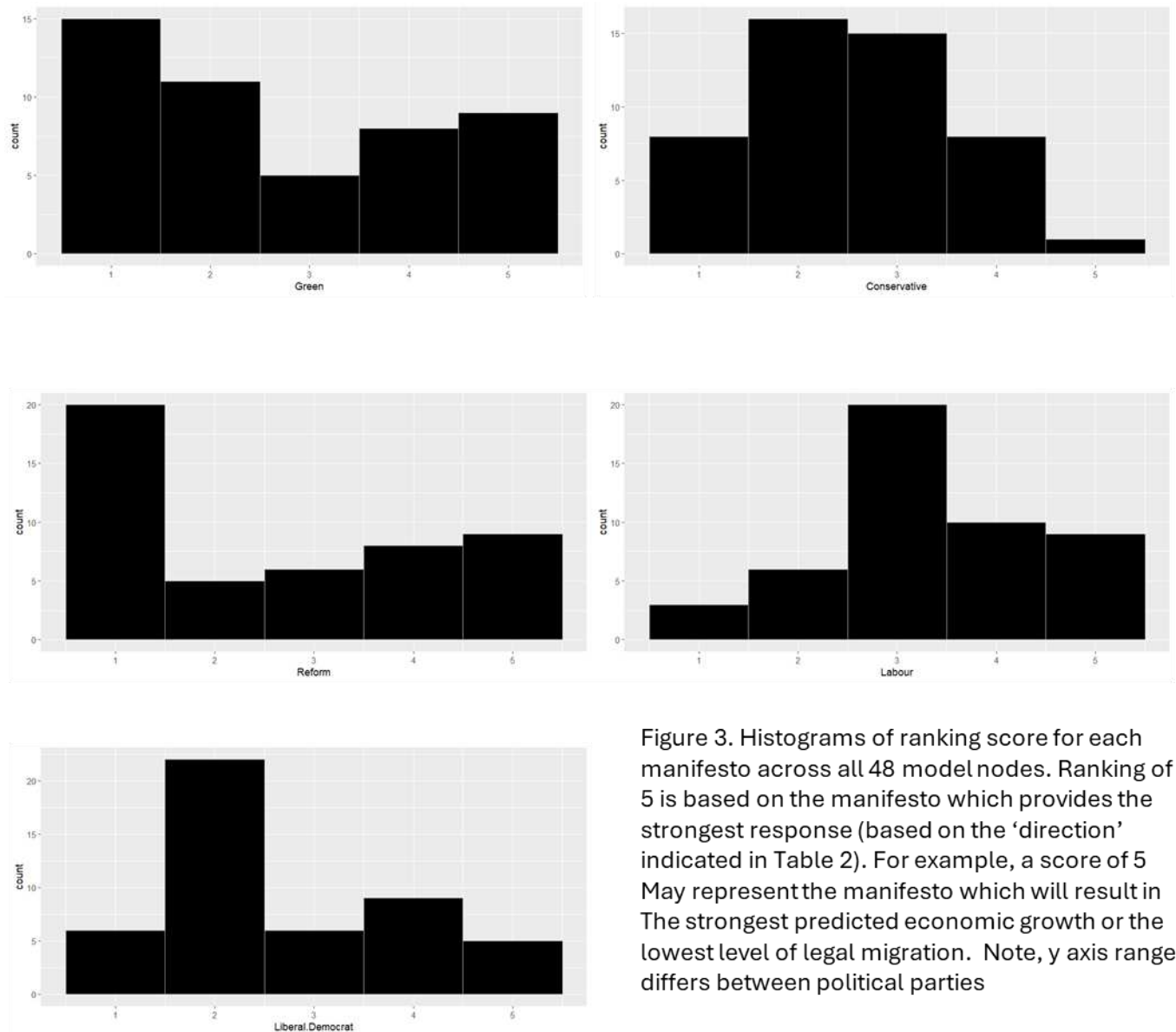
Figure 3. Histograms of ranking score for each manifesto across all 48 model nodes. Ranking of 5 is based on the manifesto which provides the strongest response (based on the 'direction' indicated in Table 2). For example, a score of 5 May represent the manifesto which will result in The strongest predicted economic growth or the lowest level of legal migration. Note, y axis range differs between political parties

3.2.1 Green Party manifesto outcomes

The Green Party manifesto provides policies with strong outcomes for the environment (Table 2, see also section 3.1). While it is low ranked for tax reduction (in most cases, taxes would increase) it also provides the highest average income and public sector pay, scores well for reducing economic inequality, increasing childcare and benefits. While not an explicit priority of the manifesto, it is predicted to deliver the second highest level of economic growth of all the political parties, an emergent result of other policies. While this may seem counter to the degrowth agenda of many Greens, and a possible reason for predicted environmental outcomes for pollution and biodiversity which weren't ranked as high as Liberal Democrat policies, the unintended or agnostic response to economic growth does fit within the concept of Doughnut Economics, often embraced by the Greens (Raworth 2018). Public services also perform well, with the best outcomes for the NHS, rail and water and sewage. The manifesto policies are predicted to perform poorly on crime and national security (although it should be noted that crime is incorporated into the model under a strong influence of traditional 'enforcement' scenarios, and alternative approaches to reducing crime may be more effective than predicted – see discussion in Hobson et al. 2021 for an example), reducing immigration

(see also section 3.2) and food production (agriculture and fishing), although considerable commitment is made to 'greening' these industries, and long-term benefits may arise from more sustainable approaches (e.g. Lehmann et al. 2020; Medoff et al. 2022). Due to regulation and likely increased financial deficits from proposed Green policies, the financial markets are predicted to be nervous of these policies, and problems from financial market instability can be catastrophic economically and politically, for example, as indicated by the rapid demise of the Liz Truss government in 2022 (Maher, 2024). While it is unlikely that the Green Party will be elected to government, the potential concerns of the financial institutions do need to be considered.

3.2.2 Reform UK manifesto (contract) outcomes

Largely predictions from this manifesto are the opposite of those for the Green Party. Reform perform very poorly on the environment (see also section 3.1). Tax cuts are typically the highest of any party, but nevertheless, average income, public sector pay and economic (in)equity are the lowest values for any party, and are predicted to get worse than current levels (Table 2). Schools, universities, the NHS and social care are also predicted to perform worse under the Reform policies. The model also predicts that economic growth is also likely to be lowest under Reform policies, compared to the highest for the Green Party, perhaps demonstrating claims of the fossil fuel lobby that these products are vital to retain high growth rates are unfounded (Daley and Lawrie 2022). Reform policies support the development of agriculture and fisheries (although from a perspective of increased supply to the UK, not in terms of longer-term sustainability of the industries). It performs well in reducing crime rate (although see discussion in section 3.2.1 regarding strong links between crime and enforcement). Perhaps surprisingly, it is only joint strongest in reducing both legal immigration (tied with Labour and Conservatives) and refugees and asylum seekers (tied with Labour).

3.2.3 Liberal Democrat manifesto outcomes

In many cases, Liberal Democrat policies result in similar outcomes to the Green Party. They perform very well on environmental improvements (see section 3.1), as well as services such as rail and utilities. They are strong on training and education (schools and universities). While the discussion about causes reduction of crime rate (section 3.2.1) is still valid, the model predicts weaker outcomes for crime and reducing immigration than many other parties. Many taxes would likely increase, although revenue from income tax would likely decrease with increased payment thresholds proposed. However, these don't correspond quite as strongly as Green policies to increases in average wages and economic inequality. Along with Labour and Conservative pledges, there is a very strong commitment to house building, which for the Liberal Democrats, does not greatly diminish their environmental credentials.

3.2.4 Conservative manifesto outcomes

Economically, the Conservative picture largely follows that of Reform, with lower taxes, but lower average incomes and public sector pay than most other parties, although the rankings are less extreme than Reform. Our model suggests it would deliver poorly on employment, increases to private investment, inflation and crime, traditionally areas associated with the Conservative party (Thackeray 2013). While changes are likely to be modest, the Conservatives are predicted to perform better on the NHS than Labour, and well on pensions and the cost of living. It performs poorly on the environment and is predicted to provide the worse outcomes for pollution of all the parties (from outputs of both models), with very little to address current

controversies such as sewage in rivers. The Conservative policies only result in one ranking of 5 across all of the nodes, this being for National Service, of which it is the only party to propose this policy.

Table 2 (Over Page). Modelled policy outcomes, with posterior values for individual nodes ranked from 1-5 across the parties - Green, Reform UK, Liberal Democrat, Conservative, and Labour, where 1 is the lowest rank and 5 is the highest. The parties are ranked for each policy node in the network (e.g., income tax), based on the direction of change ("performance indicator") stated in the first column (e.g., lowest, highest, most, improvement). For example, a value of 5 for Green tax means that green tax is lowest under Reform UK's policies, while a value of 1 means that green tax is highest under the Green Party's policies. Orange text indicates that the directional change (i.e., increase or decrease) of a node under a party's policies is consistent with the direction indicated, whereas black text indicates an opposite directional change (e.g., income tax is predicted to decrease under Reform UK in alignment with the performance indicator, and increase under Green and Labour).

Taxation and employment

Taxation and employment	Green	Reform UK	Liberal Democrat	Conservative	Labour
Income tax - lowest	1	4	4	3	2
Green tax - lowest	1	5	2	4	3
Corporate tax - lowest	2	5	1	2	4
Windfall tax - lowest	2	5	2	4	1
VAT - lowest	3	5	1	3	1
Employment - highest	3	4	2	1	4
Public sector pay - highest	5	1	4	2	3
Green Jobs - most	3	1	5	2	3
Zero hour - lowest	3	1	4	2	5
Average income - highest	5	1	2	3	3

Training and education

Training and education	Green	Reform	Liberal Democrat	Conservative	Labour
Apprentices - highest	1	3	4	1	5
Schools - improvement	2	1	4	2	4
Universities - improvement	5	1	4	2	3
Skills gaps - smallest	1	4	2	5	3

Health and Wellbeing

Health and Wellbeing	Green	Reform	Liberal Democrat	Conservative	Labour
NHS - best performing	5	1	3	3	1
Health&Wellbeing - highest	3	1	3	2	5
Social care - highest	5	1	3	3	2
Youth clubs - highest	4	1	2	3	5
Private health care - increased	2	5	1	3	4
Child care - highest	5	1	2	4	3
Crime - lowest	2	4	1	2	4

Economy and income

Economy and income	Green	Reform	Liberal Democrat	Conservative	Labour
Economic growth - highest	4	1	2	3	5
Inflation - lowest	2	5	1	4	3
Financial markets - securest	1	4	2	3	5
Inequality - lowest	4	1	3	2	4
Quantitative easing - lowest	1	5	2	2	2
Private investment - highest	2	2	2	1	5
Pensions - highest	2	1	5	4	3
Benefits - highest	5	1	4	1	3
Cost of living - lowest	2	3	1	4	5
Treasury funds - highest	1	3	2	3	3

Environment

Environment	Green	Reform	Liberal Democrat	Conservative	Labour
Carbon - lowest	4	1	4	2	3
Biodiversity - highest	4	1	5	2	3
Pollution - lowest	4	2	5	1	3
Agriculture - highest	1	4	2	4	2
Fishing - highest	1	5	2	4	3
House building - highest	2	1	3	3	3
Road - highest	1	3	2	3	3
Rail - highest	4	1	4	2	3
Water&Sewage - improved	4	2	5	1	2

Political landscape

Political landscape	Green	Reform	Liberal Democrat	Conservative	Labour
Nationalisation - highest	5	3	2	1	3
Judicial changes - most restrictive	1	4	2	3	4
Police - increased capacity	1	5	2	2	4
National security - highest	1	2	2	2	5
Refuges - lowest	1	4	2	3	4
Legal immigration - lowest	1	3	2	3	3
Foreign aid - highest	5	1	3	2	4
National Service - highest	1	1	1	5	1

3.2.5 Labour manifesto outcomes

The Labour manifesto was the longest of those studied, yet in many places had little detail and specifics of their policies. Perhaps because of this, Labour also ranked 'mid-table' for many predicted outcomes, although as indicated in section 3.2, normally a little higher than Conservatives. Labour policies were predicted to perform well in areas not really associated with Labour, for example, their policies were predicted to cause the strongest economic growth, most secure financial markets, lowest cost of living and the highest amount of private investment into the economy. However, Labour performed poorly in areas where they may be thought of as traditionally strong (Thorpe 2017). These include the joint worst outcomes for the NHS and the second worst outcomes for social care. House building, reducing legal migration and reduction of refugees and asylum seekers were also strong under Labour, as was overall employment, apprenticeships, and a commitment to end zero hours contracts. From an environmental perspective, Labour ranked in the middle of the five parties (see also section 3.1).

3.3 Limitations of the model predictions

The models used, examine commitments in party manifestos, assign scores to these commitments, and investigate the complex interaction of different aspects of the economy, environment and social landscapes to provide a prediction. The biggest limitation is that manifesto pledges may be modified, refined or not undertaken, especially if a single party does not get an outright majority and needs to form a coalition government with others (Thackerey and Toye, 2020). In addition, policies, especially tax rises, may be somewhat hidden within manifestos, with limited mention or detail, and therefore being subject to low scores in the model. Furthermore, the timeframe of the model being ~5 years (or one parliament) presents some issues, such as the long-term sustainability of agriculture or fisheries are not fully addressed, nor is the longer-term issue of migration as climate change intensifies (Berchin et al. 2017).

The model is also an integrative approach to easily quantify or semi-quantify ideas (i.e. taxation and spending, carbon budgets, performance of large organisations) and, therefore, is currently unable to capture and integrate more qualitative ideas. For example, education reforms proposed by parties such as Reform around teaching that there are only two genders ("There are 2 sexes and 2 genders") or race ("Ban Critical Race Theory in Primary and Secondary Schools") may have significant effects on some children's mental health, or long-term social equality and international relations (Riley et al. 2013; Morgan et al. 2023). Equally, many party position statements on aspects such as voter reform and international issues such as the Israel-Gaza war are not included in the model, largely because they would have limited influence on the rest of the system. If using these predictions to determine how to vote, some of these wider party positions should also be examined to arrive at an informed decision.

4. Conclusions

Our work has produced a synthesis of likely outcomes to many economic, environmental, and social aspects of pledges in political party manifestos. The two largest parties (Labour and Conservative) have more mid-ranking policies than the smaller parties. Generally, of the two, Labour are predicted to provide better outcomes (in relation to alignment with common viewpoints on what would be optimal outcomes) than the Conservatives. The Green Party and

Liberal Democrats provide much stronger environmental outcomes than the two major parties and are predicted to provide better public services. The Green Party also outperforms others in terms of addressing economic inequality. Reform, and to a lesser extent the Conservatives, perform very poorly on the environment and on public services. While taxes are reduced, average incomes and inequality can be poor. Crime (under a traditional model of more enforcement and higher penalties leading to reduction of crime rate) is a strength of the Reform policies. While a contentious issue, migration (legal and otherwise) is predicted to increase under Green and Liberal Democrat policies, but modestly decrease under the other parties' policies (notably Reform does not perform better than Labour, despite the rhetoric used by the party).

Journalists and commentators tend to concentrate on the presentation and launch of manifestos, the key takeaways and factcheck the claims made. They are an artefact of the campaign which highlights the priorities of the party as they court the voters for their support. What is difficult within the heat of a campaign is to see the interconnectedness of manifesto promises, the inconsistencies between priorities and goals and therefore how each might perform on specific areas should a party win a majority and be in the position of implementing their manifesto. It is this gap which this paper seeks to fill. By ranking each policy proposal as having an impact on other areas of policy we are able to identify the actual outcomes within key priority areas. Similar to voter advice applications, our research could be used by voters to assess how each party promises map onto their priorities. Voters asking the question 'do party promises mean actual change' can be guided somewhat by our research. Similarly, journalists could use these findings to assess the extent that broad party goals, such as moving towards a more sustainable economy or reducing poverty, will actually be realised. What our data also highlight is the difference between smaller parties who focus on specific goals and link their policy promises directly to those goals and catch-all parties. The latter, as proposed by Kirchheimer (and discussed in Krouwel, 2003), attempts to balance competing demands to maximise voter satisfaction. Hence, they will attempt to offer a little progress in multiple areas, which we may propose is Labour's strategy in 2024. Hence our data offers a fresh perspective that can be utilised broadly to understand the interconnectedness of manifesto promises and the likely outcomes if manifestos were implemented in totality, recognising it may prove impossible and impractical for implementation in some cases and contexts. We hope the study leads to more informed choices in the upcoming election and may provide valuable context for helping eliminate some of the discourse around the apparent polarisation of politics and associated rhetoric which has occurred over the last decade (Skytte, 2021).

Acknowledgements

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- Supplimentarymaterial2BBNFullModel.csv
- SupplementaryMaterial3PoliticalBBN.pdf
- SupplimentaryMaterial4BBNEnvModel.csv