



MSc Thesis

Diverging Effects of Income, Health, and Education on Populist Radical Right Vote Share: A Time Series Analysis Across 7 European Countries

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Natasja van Gennip

Abstract

Introduction: Populist Radical Right (PRR) parties and politicians have seen an increase in vote share in many Western democracies during the past decades. Recent studies have related this increase in popularity to differing socio-economic factors, such as increasing inequalities, decline in health and cultural factors. However, a clear overview, and of all these factors seems to be missing. Furthermore, it remains unclear whether these factors are associated with PRR voting or whether they have a causal relationship. This study aims to gain insights into the relationship between trends in income, health and education and the increasing vote share of populist radical right parties at the country level in Europe.

Methods: This thesis consists of a mixed-method research design. First, a scoping review was conducted to gain insights into and provide an overview of the existing knowledge on how inequalities in income, health and education have been causing an increase in PRR vote share. Inversely, the scoping review also give insights into how PRR, through their policies, have been influencing the public's income, health and education. After the scoping review, an international comparative case study, including time series analysis, was done. This gave insights into the trends of PRR vote share and certain selected income, health and education indicators. After these trends have been illustrated, cross-correlations of the independent variables and PRR vote share have been calculated to gain insights in their relationship.

Results: The scoping review revealed the underrepresentation of both health and education and their relationship with PRR voting. The relationship between income and PRR voting is widely studied and these studies have shown the complexity of the relationship, revealing many mediating factors that play a role, including punishment of mainstream parties in government from the poorer part of the population due to discontent, distrust in political elites, economic decline and relative deprivation of low-income groups as a result of increasing income inequalities, perceived status loss of middle income groups with high status, polarisation of society due to increasing inequalities, different policy preferences between high and low income groups due to income inequalities, geographical location and living area. The international comparative case study showed no significant relationship between Gini-index and PRR vote share for most countries. For all other indicators, results were inconsistent and country-specific.

Conclusion: Our scoping review showed a nuanced relationship between income inequalities and PRR voting. While on the individual level, a (perceived) decline in people's income, health and education increases the likelihood of voting for PRR, this effect generally does not seem to be present on a country level. However, these results vary depending on the specific indicator and country.

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List of Abbreviations

ACF	Auto-correlation
CCF	Cross-correlation
DF	Dansk Folkeparti (Danish People's Party, Denmark)
ESS	European Social Survey
EVS	European Value Survey
FDL	Fratelli d'Italia (Brothers of Italy)
FPÖ	Freiheitliche Partei Österreichs (The Freedom Party of Austria)
FvD	Forum voor Democratie (Forum for Democracy, the Netherlands)
HALE	Health Adjusted Life Expectancy
HBO	Hoger Beroepsonderwijs
ISSP	International Social Survey Program
MBO	Middelbaar Beroepsonderwijs
PHS	Perceived Health Status
PiS	Prawo i Sprawiedliwość (Law and Justice, Poland)
PRL	Populist radical left
PRR	Populist radical right
PVV	Partij voor de Vrijheid (Party for Freedom, the Netherlands)
SWIID	Standardized World Income Inequality Database
WHO	World Health Organisation
WO	Wetenschappelijk Onderwijs
WVS	World Value Survey

1. Introduction

1.1 Background

Over the past decades in Europe and Northern America, populist radical right (PRR) parties or politicians have seen an increase in electoral support (Turner, 2024). Since the 1960s, PRR vote shares in national and European parliament elections have more than doubled (Inglehart & Norris, 2016). For example in the Netherlands, the PRR party PVV won the 2023 national elections for the first time, obtaining 37 out of 75 seats in the House of Representatives (Kiesraad, 2023). PRR is not only gaining popularity in Europe. In the United States, Donald Trump served as president from 2017 to 2021 and won the 2024 presidential election. Trump has led the traditionally conservative Republican party since 2016, and himself is classified as a PRR politician (Mudde, 2022). Under his leadership the party is developing towards a PRR party.

The rise of PRR parties has had substantial implications for the public, as they exert influence through their policies, including those related to health (Falkenbach & Greer, 2018). According to Falkenbach & Greer, PRR parties place less emphasis on health, while immigration and national security seem more important topics for the parties. Furthermore, they are in favour of exclusionary policies, excluding certain minority groups. Additionally, a study in the Netherlands found that Dutch PRR parties had a polarising effect on society, especially through their anti-immigration stance (Silva, 2018). These findings suggest that PRR parties can drive profound societal changes, raising questions about the causes of their increased PRR vote shares. Before diving into this, it is essential to understand the core ideologies of PRR parties.

1.1.1 PRR definition

PRR parties hold three core ideologies: populism, nativism and authoritarianism (Mudde, 2007). There has been an ongoing debate in the literature on how to define populism. De Cleen & Speed (2020) have defined populism as follows: *“We see populism not as a thin ideology (as Rinaldi and Bekker do, following Cas Mudde) but as a political logic that revolves around the bringing together of different demands and groups through the discursive construction of a vertical distinction between ‘the people’ as a large powerless group, or underdog, and ‘the elite’ as a small group whose power is illegitimate because they do not represent ‘the people,’ with populist political forces claiming to represent ‘the people’ against that illegitimate elite.”*. Populism is both present on the (far)-left and (far)-right of the political spectrum, although most of the populist force in Europe is on the right (Falkenbach & Greer, 2021). Therefore, this study solely focuses on populist radical right. While populism is an important term to characterise PRR, nativism – *“a term used for a particular breed of nationalist politics that revolve around an ethnic and exclusionary definition of the nation and the defence of the ‘natives’ against national outsiders”* – serves as a more central ideology (Cleen & Speed, 2020). The last term Mudde uses to characterise PRR parties and politicians is authoritarianism. Praet (2024) has revised

Mudde's older definition¹ of authoritarianism and defines the term as “*the desire for in-group conformity at the expense of personal autonomy, represented by deference to authority and intolerance towards those who violate in-group norms, activated under perceived threat*”. An authoritarian system can be viewed as one with centralised power with only one or a few leaders holding this power (Carter, 2018). Nowadays, the biggest and most influential far-right parties and politicians are classified as radical right, while extreme right parties are more marginal and local (Mudde, 2022). The extreme right rejects democracy altogether, whereas the radical right accepts its fundamental principles but challenges key aspects of liberal democracy, such as minority rights, the rule of law, and the separation of powers (Mudde, 2019). Understanding these core ideologies and characteristics is crucial when examining the socio-economic dynamics that could drive PRR support.

1.1.2 Socio-economic determinants of PRR support

Considering the remarkable rise of PRR parties over the past decades, a movement that has remained in the background in the post-war period, scientists have begun to investigate the socioeconomic factors as a possible explanation for their growing support. In the meantime, authors have argued for many diverging explanations for this rise of PRR parties. Some appoint the increased PRR vote share to income indicators, such as economic deprivation or economic status loss (Jetten and Mols, 2021) and increasing income inequalities (Engler & Weisstaner, 2021; Burgoon et al., 2019). Others appoint it to the alienation of conservatives from progressive cultural changes, otherwise known as the cultural backlash theory (Inglehart & Norris, 2016). Another study argues that the impact of health decline causes drives people to vote for PRR parties (Kavanagh et al., 2021). The above explanations are only a fraction of the many potential factors diving the support for PRR parties, as numerous associations between socio-economic factors and this rise have been identified. However, clear evidence of causation seems to be missing.

Additionally, these studies primarily focus on individual level data, providing insights into processes affecting individuals in shaping their voting preferences. This raises questions on whether similar processes occur at country level. Based on previous studies, socioeconomic factors seem to play a role in PRR voting. While many studies have looked at income indicators – which are relevant to include – their focus is too narrow to fully capture the socio-economic factors influencing voting behaviour. Therefore, this study, in addition to income, includes health and education as possible factors explaining PRR voting behaviour. Specifically, this study will examine how income, health and education influence PRR vote share at the country level.

¹ Authoritarianism is defined as “a strict belief in order and its stringent enforcement within society through discipline, law and order-based policies” (Mudde, 2014, p. 2018).

1.1.3 The interrelatedness of income, health and education

In this study, socio-economic factors are defined as income, health and education. Given the complex relationship between socioeconomic factors, it becomes crucial to consider how income, education, and health might collectively influence the rising support for PRR parties. Research underscores the interconnectedness of these factors. For example, Subramanian & Kawachi (2004) mention that individual income is a strong determinant of individual health. Wu et al. (2020) emphasises how education influences critical health outcomes, such as the amount of year lived in good health. Moreover, education not only determines health but also influences income and employment opportunities. This interdependence suggests that understanding the separate and combined effects of income, education and health is crucial in explaining the rise of PRR in Western democracies, as these factors may collectively shape political preferences.

1.2 Problem Statement

The current body of literature on the explaining factors of the rise PRR have yielded competing explanations for the rise of PRR, leaving ambiguous assumptions about the explaining factors for the popularity of PRR. Many factors appear to influence PRR voting behaviour, but whether these are relationships are merely correlations or reflect actual causal effects remains unclear. Additionally, a systematic overview of all these factors that seem to impact PRR vote share seems to be missing in the body of literature. Besides this, studies trying to explain the rise of PRR through socio-economic explanations have primarily focused on income (inequality) indicators. The role of health and education in this relationship remains (partly) unknown and calls for further research. While most studies focus on individuals process in trying to explain PRR voting behaviour, little research has looked at country level data that explain the increase in PRR vote share. A broader, country-level approach that includes income, health and education is needed to fully understand the complex drives behind the increased PRR vote share of the recent decades.

1.3 Aim, Research Questions and Study Relevance

1.3.1 Aim and Research Questions

This thesis aims to gain insights into the relationship between trends in populist radical right vote share in Europe on the one hand, and trends in income, health and education on the other hand. To reach this aim, the following sub-questions will be addressed:

1. What is known in the literature about the relationship between income, health and education (inequalities) and PRR voting behaviour, and what are potentially mediating factors?
2. How has PRR vote share evolved between 2000 and 2024 in Europe?
3. What are the trends in income, health and education (inequalities) in Europe between 2000 and 2023?

4. What is the relationship between income, health and education and voting for populist radical right between 2000 and 2023 in Europe?

1.3.2 Scientific and Social Relevance

This study aims to contribute to the current knowledge gap by incorporating health and education indicators additionally to income, and takes a country-level perspective by trying to explain the impact of socio-economic changes over time on PRR vote share. In this way, our study contributes to the literature by studying whether individual socio-economic explanations, as present in the literature, are also present at a broader, societal level. This study will investigate if and how combined societal trends are associated with PRR vote share. It also adds to the newer research field of health political science by studying how health and PRR voting behaviour may be associated.

With 36% of the European population living with a chronic health problem in 2022 (Eurostat, 2023) and considering that substantial health inequalities in Europe are still present (European Commission, n.d.), understanding the relationship between health and voting for populist radical right is more important than ever. Besides this, the insights and knowledge obtained in thesis could be relevant to politicians and policymakers who could use this knowledge to form their social, economic and health policies. Thus, this study will investigate the relationship between, on the one hand, PRR vote share, and socio-economic and inequalities, specifically income, health and education, on the other hand.

2. Theory

In this section, theories on the relationship between income, health and education and voting behaviour are discussed. Because of competing explanations for PRR voting in the literature, we first zoom out to theories on factors driving voting behaviour in general. Then, we zoom back in to some theories on PRR voting. Based on these theories, a framework is made to conceptualise which factors influence PRR voting. The framework is used as a guidance to answer the research questions.

2.1 Theories on Voting Behaviour

2.1.1 The relationship between income, health and education and voting in general

Socio-economic factors, such as income, health and education, are by many authors often assumed to drive certain political behaviour. When looking at early theories on voting behaviour, the Schattschneider hypothesis (1960) suggests that citizens of countries with larger income inequalities are less likely to vote and that the rich part of the population is more likely to participate in voting. This dynamic creates an income bias in the electorate, and consequently in legislation and public policies. This hypothesis has been supported by multiple, more recent, studies (Solt, 2010; Schlozman et al., 2018). Schlozman et al. argue how the less affluent citizens in the U.S. have a substantially weaker political voice than the more privileged citizens. Erikson (2015) also notes that those with a low income are less likely to vote and be politically involved than their high income counterparts, which limits their influence.

Besides income, educational attainment level has been assumed to be related to voting behaviour as well. A study in the U.S has shown that education has a direct effect on voting participation, independently from the effect of obtaining a higher socio-economic status when completing college (Ahearn et al., 2023). This effect was especially strong for people who came from a more disadvantaged background, with a lower socio-economic status. Stubager (2013) has argued how education is an important factor in forming a person's authoritarian-libertarian values, with the lower educated leaning towards authoritarian values, while the higher educated gravitate towards libertarian values. Authoritarian values were related to PRR voting. Besides this, Stubager discusses how education-based identity, the feeling of belonging to the group of high or low educated, influences voting behaviour. Combined, the study shows how both the authoritarian-libertarian values and education-based identity, which are shaped through a person's education, influence voting for a certain type of political party or politician.

Besides income and education, many authors hypothesize health to have a strong influence on voting behaviour. Good health allows people to participate in society, to work, and to socialise with friends and family. A person's demographic, social and economic conditions are all determinants of health (Braveman & Gottlieb, 2014). Yet, a decline in health can influence how people interact within their

social and economic contexts, which may influence their political preferences (Kavanagh & Menon, 2024). Additionally, poor health could negatively affect a person's perceived political efficacy (Gidengil & Wass, 2024). Those in poor health have less positive attitudes towards the possibility of social change (policy responsiveness) and tend to have more negative perceptions on their ability to participate in political participation, such as voting (Shore et al., 2020). Poor health can limit people to inform themselves about political developments, as political participation takes time and energy (Gidengil & Wass, 2024). Besides this, Gidengil and Wass explain how it can influence educational attainment level and employment opportunities, thereby leading to fewer resources to participate in politics.

2.1.2 The relationship between income, health and education and PRR vote share

Besides electoral participation, studies have considered socio-economic factors and health to influence electoral decisions. A study in the United States has shown that when life expectancy within communities increases, the Republican vote share decreases, and vice versa, when life expectancy drops, the Republican vote share increases (Curtis et al., 2021). Backhaus et al. (2019) showed that PRR voters were 43% more likely to report poor health compared to those voting for mainstream parties. Yet, this study could not clarify whether poor health was caused by personal choices or social factors that also influence political beliefs, or whether the PRR ideology itself caused poorer health (e.g. through anti-vaccination ideologies). Additionally, a study in France has shown how health functions as a predictor for voting outcomes, with poorer health predicting votes for Marine Le Pen (PRR), while those with good health tend to vote for Macron (central, liberal) more often (Zeitoun et al., 2019). The same study shows the influence of wealth, which lead to the same effects: the less wealthy vote for PRR, while the wealthy vote for the party at the centre of the political spectrum. Besides this, decline of economic status among working-class individuals without higher education has been associated with voting decisions, leading them to vote for non-mainstream parties rather than mainstream parties (Perrella, 2009). In line with this, Gidron & Hall (2020) have shown that rising income inequalities influence the probability of voting for PRR parties or politicians. This phenomenon is explained through the idea that income inequalities create social hierarchies. Those who feel socially marginalised, or those who, subjectively, are at the bottom of the hierarchy, are more likely to vote for parties on the far right or far left of the political spectrum.

A key factor mentioned as linking socio-economic status, health, and electoral behaviour is the level of trust in political institutions (McManus, 2021). Trust in these institutions is based on experiences people have had with it. A possible driver for this distrust is discontent with a person's economic situation (Faggian et al., 2021). This discontent arises when someone's (economic) needs are unmet and they believe that this is the government's responsibility, which is more common among those with lower socio-economic status. Poor health has also been proven to be related to low satisfaction with health institutions (Batbaatar et al., 2017), just as unmet healthcare needs (Chambers-Richards et al.,

2022). This dissatisfaction translates into lower trust and confidence in the health system (Schwei et al., 2014) and the political system in general (Christensen & Lægred, 2014). Thus, those with poor health tend to have lower trust in political institutions, while people in good health have more trust in these institutions and are more likely to participate in voting (Mattila, 2020). Furthermore, exposure to institutional failures may lead to a tendency to vote for populist radical right parties or politicians that act as a voice for their discontent with institutions and promise to restructure these institutions (Kavanagh et al., 2021).

Kavanagh and Menon’s (2024) model (figure 1) visualises the interaction between health, economic conditions, including income and education, and social conditions in the context of political behaviour. It depicts a self-reinforcing cycle that represents the interaction between health, economic and social conditions and political preferences and behaviours and how these political preferences and behaviours influence government policies through elected officials. These policies again influence the public’s health, economic and social conditions, closing the circle.

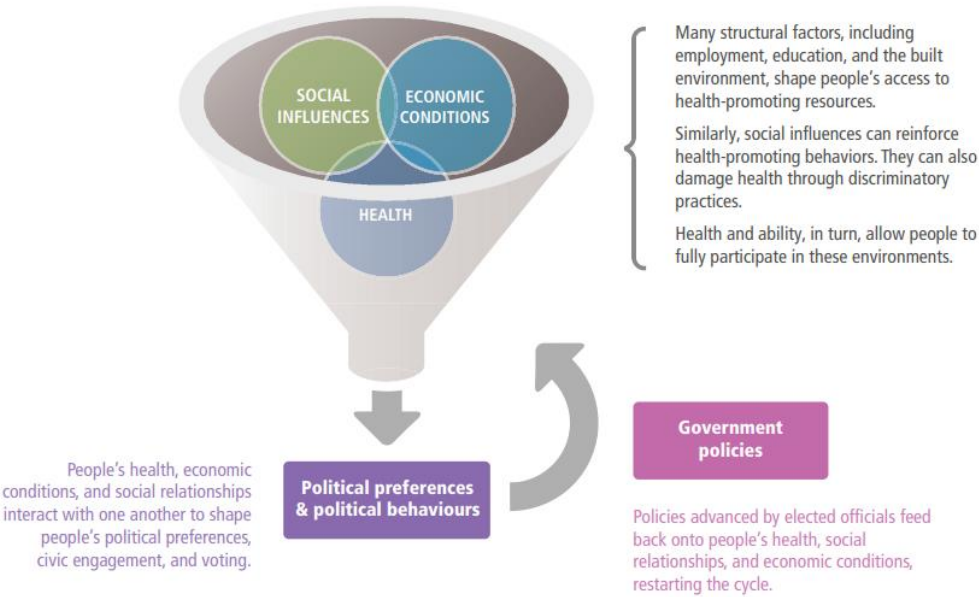


Figure 1 Health, social structures and politics interact in a self-reinforcing cycle (Kavanagh & Menon, 2024).

2.2 Theoretical Framework

Based on the studies above and the model by Kavanagh and Menon (2024), the framework below has been generated (figure 2). This framework has been adjusted specifically to the scope of this thesis and explains the relationship between income, health and education and PRR vote share, combined with a

time element which reflects the changes over time that will be measured in this study. Although many studies indicate a direct relationship between income, health and education and voting behaviour, Kavanagh and Menon (2024) have argued that this effect is often mediated through distrust in public institutions. In this study, distrust in institutions is operationalised as unmet health care needs, as Kavanagh and Menon (2024) describe that the dissatisfaction with these institutions driving the distrust is often caused by unmet needs of those with poor health. Our model also includes the feedback loop of PRR vote share, which through PRR policies influence health, income and education. The arrows with closed lines illustrate the relationships this study will investigate. The arrows with dotted lines reflect important additions which are present in the literature, but which this study will not include.

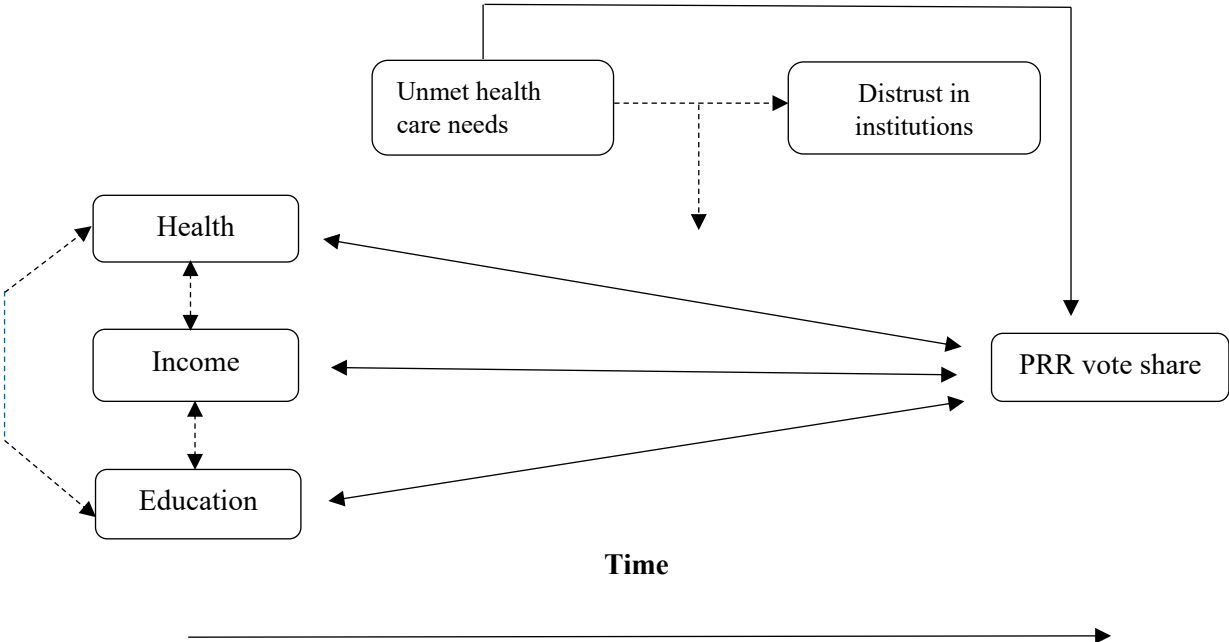


Figure 2 Framework income, health and educational status and voting behaviour.

2.3 Hypotheses

Based on the theory and framework, the following hypotheses are constructed for research question 4:

1. A change in income between 2000 and 2023 is negatively associated with PRR vote share within a country.
2. A change in health between 2000 and 2023 is negatively associated with an increased PRR vote share within a country.
3. A change in educational attainment level between 2000 and 2023 is negatively associated with an increased PRR vote share within a country.

3. Scoping review

In order to answer research question one, a scoping review is conducted. This literature study was conducted to investigate what is already known about the relationship between income, health and education (inequalities) and PRR voting are present in the existing literature. First, the methods will be described, including the search strategy and selection criteria. Following this, the results of the scoping review will be discussed with a PRISMA flowchart, overview of study characteristics and content analysis.

3.1 Methods

This scoping review gives insights into what is already known about income, health and education inequalities and PRR voting, and what mediating factors in this relationship are already studied. For an optimal literature search, at least two databases should be used (Suarez-Almazor et al., 2000).

Therefore, this study uses the databases Web of Science, Scopus and ScienceDirect to find the relevant literature. For all databases, a similar search strategy was used, although some database-specific adjustments have been made. The search strategy, selection criteria and study selection are described in the following sections.

3.1.1 Search Strategy

The full search strategy, as depicted in table 1, was used for the databases Web of Science and Scopus. For ScienceDirect, the search term was too broad as a maximum of 8 terms was allowed. Besides this, the database did not support wildcards, so the asterixis were removed. Because of this, the search strategy was slightly adjusted.

Data base	Search strategy	Results
Web of Science	((“populist radical right” OR “radical conservative” OR “far right” OR populis*) AND (vot* OR elect* OR “voting behaviour”) AND (health OR soc* OR econ*) AND (inequal* OR inequity OR disparit*))	207
Scopus	((“populist radical right” OR “radical conservative” OR “far right” OR populis*) AND (vot* OR elect* OR “voting behaviour”) AND (health OR soc* OR econ*) AND (inequal* OR inequity OR disparit*))	215

ScienceDirect	((“populist radical right” OR “far right” OR populism) AND (vote) AND (social OR economic OR health) AND (inequality)).	796
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Table 1 Search strategies in the databases Web of Science, Scopus and ScienceDirect.

3.1.2. Selection Criteria

The article selection consisted of three steps: title, abstract and full text screening. In order to find useful articles, several inclusion and exclusion criteria have been used (table 2). The first criterion is that the articles should be written in English, peer-reviewed and published after 2000. Papers published before 2000 cannot give useful insights into the recent rise of PRR, which is why they are excluded. Content-wise, the articles should be about voting for populist and/or far-right political parties and politicians and its relation with income, health and education (inequalities). Articles should meet all meet the first three inclusion criteria. For the last two inclusion criteria, articles should meet at least one of the two criteria.

Articles about other factors than income, health or education, will be excluded. Also, articles solely on far-left populism will be excluded from the selection. Besides this, articles which are not accessible through the WUR library will be excluded.

Inclusion Criteria
Articles should be written in English.
Articles should be peer-reviewed.
Articles should be published after 2000. For ScienceDirect, articles should be published after 2010.
Articles should be about voting for populist and/or far-right political parties and politicians and its relation with income, health and/or education (inequalities).
Articles should be about PRR policies.
Exclusion Criteria
Articles that discuss PRR voting without addressing income, health, or education.
Articles about solely far-left populism.
Country-specific studies when similar studies with broader study population have been included.
Articles not accessible through the WUR library.

Table 2 In-and exclusion criteria for article selection scoping review.

3.1.4 PRR policies’ impact on income, health and education

In order include the ‘government policies’ dimension, which is stated in Kavanagh & Menon’s (2024) self-reinforcing cycle, part of the literature study will focus on social and welfare policies that have

been implemented or supported by PRR parties. In this way, although not empirically studied, this study can still show how PRR policies could influence income, health and education based on previous studies. When relevant articles on PRR policies were found during the literature search on the relationship between social status and PRR voting, they were included in the study selection. Other useful articles will be found through snowballing.

3.1 Results

The first section of this chapter depicts the PRISMA flowchart of the scoping review. After this, the details on of the selected studies are summarised in two tables. The first table illustrates the studies that examined the impact of income, health and education on PRR voting. The second table illustrates the studies that investigated how PRR have been influencing the public's income, health and education through their policies. Lastly, a content analysis is done on the selected studies.

3.1.1 PRISMA Flowchart

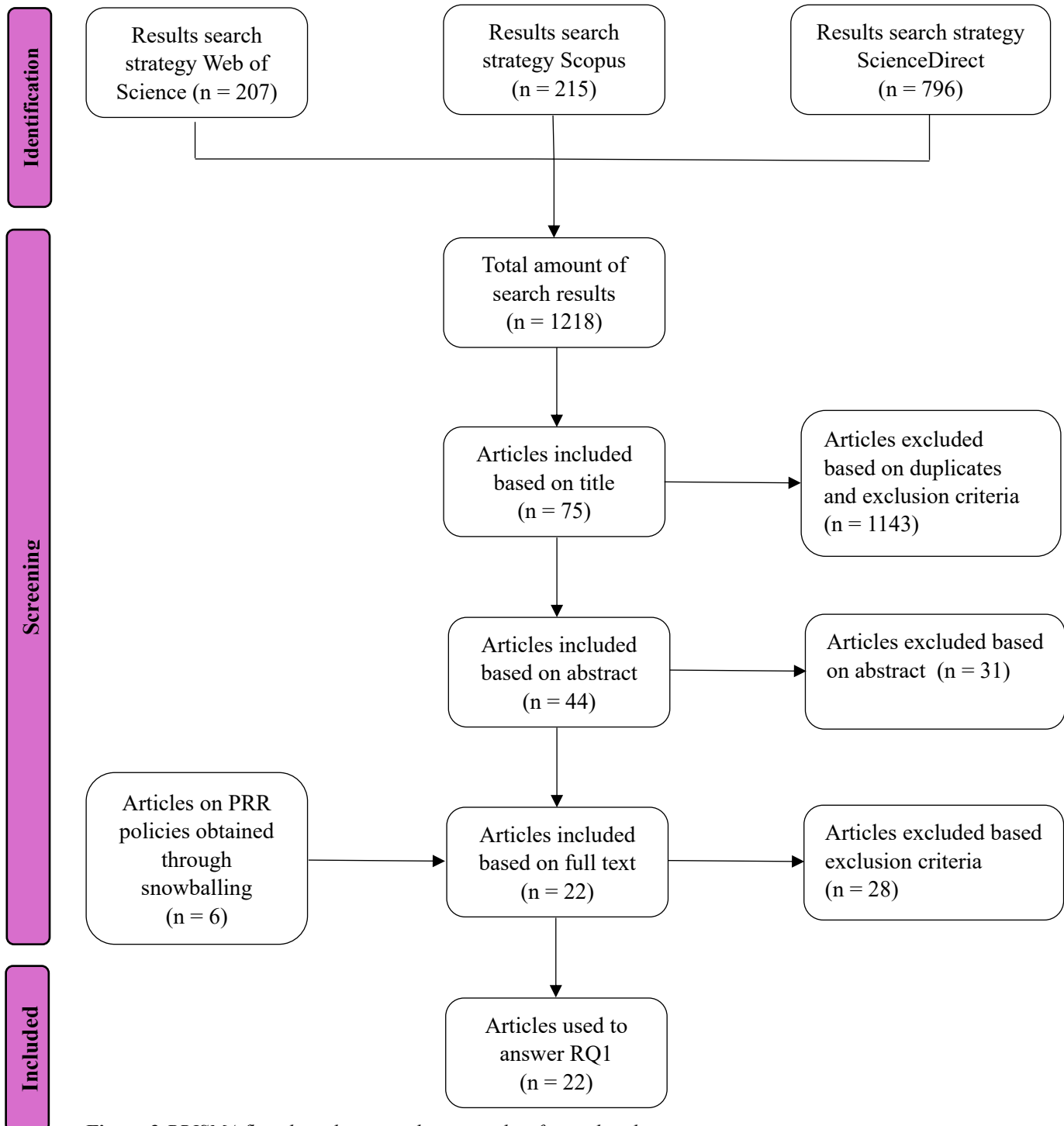


Figure 3 PRISMA flowchart depicting the steps taken for study selection.

3.1.2 Included Studies Inequalities and PRR: Descriptives

Table 5 gives an overview of the articles that have studied how income, health or education affect PRR voting behaviour. The results of this part of the literature study answer research question 1. Table 6

shows the included studies and characteristics of studies that look conversely into how PRR policies have been affecting the public's income, health and education. The full list of included studied is listed in [appendix 3](#). Studies that seemed relevant based on their title, but at a later stage have been excluded from the full selection, can be found in [appendix 4](#).

Authors (year)	Journal	Country Research ers	Peri od Stud ied	Research Aim	Study Design	Methods	Country and Study Population	Measurement unit (individual vs. population)	Relevant Results
Gomez et al. (2024)	Electoral Studies	U.K., Spain, France, Italy	2019	To study how objective labour market status and perceived job insecurity are affiliated with voting for PRR and PRL.	Cross sectional design, survey	Multinomial logistic regression models	8009 economically active (working individuals or unemployed but searching for a job) respondents from France, Germany, Greece, Spain	Individual-level	Job insecurity is linked to voting for PRL, but not for PRR. Labour market outsiders (insecure jobs, unemployed, part-time jobs) are more likely to vote for radical parties.
Rodríguez-Pose et al. (2023)	Journal of Economic Geography	U.K.	For U.S., 2012 – 2020, for EU, 2014 - 2018	To study the association between interpersonal inequalities and economic decline and the increasing popularity of PRR parties.	Repeated cross-sectional design, data obtained from BEA (U.S.) and ARDECO (EU).	Multilevel modelling	U.S. and Europe. For EU, NUTS3 regions from countries with populist parties. were used. For the U.S., data was obtained from counties.	Population-level	In the U.S., both interpersonal inequality and economic decline did not predict populist voting on their own. When considered with racial composition of living area, it did. In Europe, economic decline was a significant indicator for PRR vote, especially in areas with a high immigration share.
Ivanov (2023)	Comparative Economic Studies	Hungary	2002 - 2016		Repeated cross-sectional design, data obtained from ESS.	Multilevel modelling	28 European countries.	Individual-level	For groups that are not economically insecure, trust in institutions is negatively associated with populist voting. For those, who are economically insecure, trust in institutions seems almost irrelevant and their economic position is the main determinant of their voting behaviour. The more economically insecure one is, the more likely this person is to vote for populists.
Bergh & Kärnä (2022)	Social Science Quarterly	Sweden	1980 - 2018	The study aims to find country-level factors that account for the rise of populist parties in Europe by looking at the labour market and inequality.	Repeated cross-sectional design, data obtained from OECD and PopuList	Country-level fixed effects regressions	26 European democracies	Population-level	Gini inequality is not related to both PRR and PRL. Strict employment regulation is positively associated with PRR voting.
Proaño, Peña & Saalfeld (2022)	Review of Social Economy	Germany	1970 - 2016	This paper studies the macroeconomic and social determinants of the increasing success of far-right and far-left political parties.	Repeated cross-sectional design	Panel OLS regressions	20 advanced countries	Population-level	Income inequality is related to the increasing success of far-right parties (not far-left).

Stoetzer, Giesecke & Klüver (2023)	Journal of European Public Policy	Germany	2002 - 2017	This paper aims to explain how increasing income inequality explains the rise of populist parties through four attitudinal mechanisms: economic insecurities, trust in political elites, social integration and national identity.	Repeated cross-sectional design, data obtained through ESS and SWIID (Standardized World Income Database)	Multilevel modelling	14 West-European countries	Both (outcome variables at individual level)	None of the attitudinal mechanisms sufficiently explain the relationship between income inequality and support for populists.
Abou-Chadi & Kurer (2021)	World Politics	U.K. and Switzerland	-	To study how household, rather than individual, unemployment risk affects voting for PRR.	Repeated cross-sectional design, large-scale labour market data from EU-SILC and cross-national survey data from ESS	Linear probability model and multilevel model with random effects	11 West-European countries	Individual level	Household economic risk is an important driver to vote for PRR. Looking at household risk, rather than individual risk, shows how one high-risk individual in a household could be enough for all other members of that household to vote for PRR.
Vlandas & Halikiopoulou (2021)	West European Politics	U.K.	2002 - 2016	This study aims to examine the interaction between social risks, welfare policies and voting for far right.	Repeated cross-sectional design, data obtained from ESS and national level welfare state policy datasets	Multilevel random intercepts logistic regressions	14 Western European countries with support for far-right parties.	Both (outcome variables are at individual level)	Generous welfare state policies reduce the possibility to vote for PRR amongst those exposed to high (social) risks. When welfare policies are more generous, the needs of vulnerable groups are more likely to be met, decreasing the likelihood of these groups to vote for PRR. Therefore, studies trying to understand the relationship why people vote for PRR should not only focus on the social and economic risks, but also included how welfare policies moderate these risks.
Engler & Weisstanner (2021)	Journal of European Public Policy	Switzerland, U.K.	1987 - 2017	This study aims to provide insights into the relationship of income inequality and radical right parties beyond relative deprivation.	Repeated cross-sectional design, data obtained from ISSP	Logistic regression models	14 OECD countries, excluding Eastern European countries	Both (outcome variables are at individual level)	The relationship between income inequality and PRR voting can be explained in two ways. First, those who feel relatively deprived tend to vote for PRR parties who promise to restore the status of those feeling left behind. But this is not the only reasoning. This paper argues that rising income inequality increases fear of social decline among middle-income, high status groups, which leads to PRR voting.

Ausserlandscheider (2019)	Sociology Compass	U.K.	-	This study aims to raise awareness on how economic insecurity and cultural backlash are not two separate phenomenon that drive people to vote for PRR.	Literature review	-		-	This paper argues that scientific literature on PRR voting should consider how PRR discourse on economic insecurity and cultural backlash combined create an electorate for PRR parties.
Han (2016)	Electoral Studies	U.S.	1990 - 2012	This study tests different hypotheses on how income inequality and voting for PRR are related in Western Europe.	Repeated cross-sectional, data obtained from ESS, EVS, WVS and SWIID.	Multilevel analysis	Western European countries	Both (outcome variables are at individual level)	Income inequality increases PRR support among workers with a low income and decreases support among the richer working part of the population. Income inequality did not seem to affect the middle class.
Snower & Bosworth (2021)	European Journal of Political Economy	Germany, U.K.	-	This study aims to show how increased inequality of skills, income and education lead to social and political fragmentation, which could explain the rise of populism.	Theoretical modelling approach	Mathematical analysis	-	-	Rising inequality leads to social fragmentation, reflected in the growing polarisation of values. The 'elite' focus on individualistic material goals, leaving the disadvantages worse off. These divides are reflected in the rise of populism.
Silva (2024)	European Journal of Political Economy	U.K.	2002 - 2018	This study uses a framework that assumes that voter' preferences and behaviour relies on their subjective well-being to explain the rise of populism in Europe.	Repeated cross-sectional design, data obtained from ESS	Probit regression analysis	All European Union member states	Individual-level	Discontent and unhappiness are predictors of voting for populists, although in periods of crisis voting for populists seems to be influenced by other economic, cultural and social aspects. Besides this, political trust acts as a mediator in this relationship.
Gradstein (2024)	Journal of Comparative Economics	Israel	-	This study aims to show that the rise of populism can be explained through increasing income inequality and limited intergenerational mobility	Theoretical modelling approach	Equilibrium analysis	-	-	The rise of populism can be attributed to growing inequalities in income, social status and political power. This is translated into political decisions, causing the underprivileged to turn to populism.
Schraff & Pontusson (2024)	Journal of European Public Policy	Denmark, Switzerland	1990 - 2018	Communities experiencing relative material decline use benchmarks which they compare their own well-being to. This study aims to shows which benchmarks are most salient in shaping	Panel study	Panel data regressions	All European Union member states	Population-level	In the core member states (the six original member states and Denmark, Ireland, U.K., Austria, Finland, Sweden), regions falling behind the richest region within the country tend to turn to PRR. The peripheral member states tend to compare more between countries than within. In this context, a wealth gap compared to the EU core shapes support for PRR.

				political preferences and voting for PRR.					
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Table 3 Overview of studies included on how income, health and education influence voting for PRR.

Table 5 gives an overview of all included studies which looked at the impact of income, health or education on PRR or populist voting. The results of the literature search resulted in a overrepresentation of studies on the relationship between income inequality and the recent success of PRR parties compared to health and education that showed up less in the search for papers. None of the studies focused on the potential interdependencies between income, health and education, despite multiple studies finding relatedness between the indicators (Abdullah, 2015; Hahn & Truman, 2015; Zajacova & Lawrence, 2018). This means that there is still a knowledge gap on how income, health and education jointly influence PRR voting. Additionally, most study populations and researchers are European, with some exceptions (e.g. two studies with researchers from the U.S. and Isreal). In contrast to the lack of variety in continental representation, there is quite some variation in type of journals, in which the selected articles have been published. The articles are published in a mixture of political science journals, economic journals and sociological journals. This variation reflects that inequalities and populism are a topic of interest in multiple disciplines. Studies have been conducted between 1970 and 2019, covering a wide time range. Most papers are relatively recent with data obtained in 2016 or after, with one exception of Han (2016) which used data from 1990-2012.

Some of the papers have studied time periods of more than 30 years, while others have studied time periods of 10 years or only one year. The recency of papers is beneficial as older studies might not be suitable to explain the recent rise of PRR given large scale global and societal developments that seem to destabilise trust, norms and structures in the 21st century. Lastly, two studies have collected data, but most papers are based on large existing datasets, such as those from ESS², ISSP³ or SWIID⁴. On methodology most of the papers report on quantitative studies, one study was a literature review and two were based on mathematical modelling. None of the studies was qualitative.

² European Social Survey

³ International Social Survey Programme

⁴ Standardized World Income Inequality Database

Authors (year)	Journal / Publisher	Country Researchers	Years	Research Aim	Study Design	Methods	Country and Study Population	Relevant Results
Gruber & Schnell (2023)	Journal of Contemporary European Studies	Austria	1990-2020	This study aims to analyse the PRR education policy and to highlight that education, although not considered as their core policy interests, has become an important topic for PRR parties as well. This is done by studying the case of FPÖ (Austria)	Systematic longitudinal analysis	Qualitative content analysis	Austria, FPÖ's party programs, manifestos and debates on education	FPÖ has taken education as an important policy point, contradicting earlier studies saying that education was not as relevant for PRR parties. FPÖ's stance on education is similar as their stance on other topics, namely anti-mainstream, nativist and merit traits. The party remained quite stable on their position on education over the course of time. During their time in office, FPÖ had an influence on educational policy through legislation (e.g. language classes and headscarf bans).
Rasmussen (2023)	Journal of Contemporary European Studies	Denmark	2019	This study analyses education ideals and policies of two Danish PRR parties based on the 2019 national elections.	Cross-sectional design	Content analysis of education policy documents	Denmark, education policy documents, education positions in parliament and research results on voter attitudes and preferences in the 2019 election from the Danish People's Party (DPP) and the New Right Party (NRP).	DPP shows socially moderated right-wing populism, whereas NRP shows more economic liberalism combined with right-wing populism. Authoritarianism is present in both parties, although they both advocated from reduced state authority in education. For both parties, education is not a core focus. Yet, they do advocate for Christian education, having Danish as the primary language in higher education and oppose to Muslim-only schools.
Chueri (2023)	Journal of European Social Policy	Switzerland	1990-2014	The study aims to emphasise the difference between how mainstream and PRR parties address migrant groups' right to social benefits.	Event history analysis		Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.	Asylum seekers were the primary target of governments, unrelated to whether the government consisted of solely mainstream parties or included PRR parties. Governments with PRR were more selective in granting social benefits to migrants from within the EU than governments consisting of mainstream parties, which aligns with PRR's euroscepticism.
Pan (2023)	Journal of Economic Behaviour & Organization	China	1960-2018	This study aims to examine the effect of populism (both in and outside of Europe) on household debt.	Repeated measures	Regression analysis	30 (worldwide) countries who have or have had populist leaders.	Overall, household debt decreased while populists were in office. PRR reduces household debt by increasing public debt, while PRL reduces household debt by reducing consumption.
Strobl et al. (2023)	Journal of Economic Behavior & Organization	U.K., Czech Republic, Spain, Denmark	1971-2014	This study aims to research whether populists affect the distribution of income when in office, as they claim to redistribute from the elite to the ordinary people.	Repeated measures	Ordinary least squares (OLS) analysis	22 countries in Latin America and Caribbean	Populism has not shown to influence income and consumption inequality. Thus, in Latin America and Caribbean, populist policies do not lead to a more equal distribution of resources.
Falkenbach & Greer (2021)	Springer	U.S.A	-	To present an overview of PRR's effect on health and health policy in ten countries where PRR have played a substantial role in government.	Literature study and policy analysis	-	Austria, Brazil, Germany, U.S., Italy, Poland, the Philippines, Hungary, U.K. and the Netherlands	Both welfare chauvinism and liberal chauvinism are phenomenon that are present in PRR welfare/health policies, but differ per country and per PRR party. Besides this, PRR parties are more likely to undermine science.

Rathgeb & Busemeyer (2022)	West European Politics	U.K. and Germany	-	This study investigated the relationship between PRR and the welfare state, considering both its causes and consequences. It does so by integrating research on party politics and voting behaviour with studies of political economy and the welfare state.	Literature review		Europe	PRR does not support 'pro-welfare' policies and they emphasise 'deservingness' in their welfare policies, in line with their authoritarian values.
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Table 4 Overview of studies used to research how PRR policies have affected income, health and education.

Table 6 gives an overview of the selected studies that examined how PRR policies have influenced the public's income, health and education. The papers are published in a wide range of journals, differing from European Studies to the Journal of Economic Behavior & Organisation and the International Journal of Health Policy and Management. Most authors work at European institutions, although a few currently work in other countries such as China and the U.S. In contrast to the papers in table 5, many countries are represented in the included studies of table 6. In this case, not only European countries are studied, but also countries from Asia and Latin America. Four studies have analysed PRR policies over an extended period (more than 20 years), providing valuable insights into how these policies have evolved over time. One study looks at policy documents of the year 2019, giving a recent and in-depth analysis of PRR education policies in a specific country. Examining the study designs and methods employed in these studies reveals a diverse range of methodologies. These include literature reviews as well as policy and content analyses. Overall, the selected studies represent a well-balanced collection of articles, encompassing diverse contexts and methodologies.

3.1.3 Content Analysis

The recent success of the radical and populist parties on both the left and right side of the political spectrum is characterising of the past decade and has not happened since the 1960s and 1970s (Proaño et al., 2022). A common explanation for this phenomenon says that a group of people who feel left behind by globalisation and economic modernisation of the past decades resonate with PRR parties who claim to put the country's people first (Engler & Weisstanner, 2021). At the same time, inequalities in both income and health have been growing in Western countries (Stoetzer et al., 2021). Recent papers have studied the relationship between these two phenomena, which are hypothesized to be related in two directions. First, the growing inequalities lead to an increase in PRR vote share. This direction is discussed in the 4.1.3.1, 4.1.3.2 and 4.1.3.3. Second, the PRR policies and rhetoric influence the people's income, health and education, discussed in part 4.1.3.4.

4.1.3.1 Income indicators and PRR: evidence of more nuanced relationships

A majority of the selected studies focus on income inequality and (relative) economic status in relation to PRR vote share, though the results are mixed. Seven articles⁵ argue that rising income inequality contributes to PRR support, although this relationship seems more nuanced rather than direct, as social status, social fragmentation, de-industrialisation, geographical location, satisfaction with government and trust in elites all seem to play a mediating role. Two articles⁶ did not find support for the influence of income inequality on PRR voting.

Han (2016), Proaño et al. (2022) and Engler and Weisstanner (2021) found support for the idea that the lower-income populations are more prone to vote for PRR parties than the richer part of the population. Since the study from Han (2016) covers data only until 2012, its finding may be outdated. However, more recent research by Proaño et al. (2022) yielded similar findings. Their findings show that both the Gini-coefficient and average income inequality (measured as the poorest 10% of the population) indicated an increase of PRR vote share, suggesting that only the economically disadvantaged perceive relative deprivation. They argue that mainstream parties in government get punished for inadequate economic performance which is mostly felt by the disadvantaged groups, driving them to turn to PRR. Engler & Weisstanner (2021) partly contradict Proaño et al.'s claim that the poorest part of the population turns to PRR due to economic threat. The authors argue that not only relative deprivation caused by increasing inequalities, but also perceived status loss, or reputation loss, drives people to vote for PRR parties. While lower-income groups may feel left behind (relative deprivation), middle-income and high-status groups, fearing downward movement among the social ladder, also turn to PRR to protect their reputation.

⁵ Proaño et al., 2022; Engler & Weisstanner, 2020; Han, 2016; Snower & Bosworth, 2021; Gradstein, 2024; Schraff & Pontusson, 2024; Rodríguez-Pose et al., 2023.

⁶ Bergh & Kärnä, 2022; Stoetzer et al., 2023.

Snower and Bosworth (2021) and Gradstein (2024), who looked at populism in general, discuss how increasing inequalities lead to polarising values and policy preferences, leading to populism.

According to Snower and Bosworth, the economic “elites” turn to individualistic values. On the other hand, the disadvantaged turn to “communitarian goals” as they are disadvantaged in two ways. Firstly, they increasingly lag behind in the competition for status goods – goods that are scarce and, because of this, hold high social standing. Secondly, they experience less social benefits since the elite withdraws from community activities. The authors refer to this phenomenon as ‘social fragmentation’. The disadvantaged group, often low-skilled or low-income workers, have turned to populism which allows for more closed policies – such as trade protectionism, strict immigration policies and nationalist policies. Gradstein further suggests that the high social status group, which also holds more political power as they are in a less threatened economic position, is better able to translate their political preferences to implementable policies than the lower-status group. Rather than to trust in the educated elites to make the policy decisions, low status groups are driven to make their own, less informed political decisions. The feeling of being excluded or unheard in political decision making is what drives members of the low status groups to turn to populism.

Schraff & Pontusson (2024) and Rodríguez-Pose et al. (2023) focus on regional economic disparities. In the EU core (founding) countries⁷, economically deprived regions tend to be more popular for PRR parties compared to wealthier regions. In peripheral member states⁸ emphasis shifts from within-country comparisons to the wealth gap between these countries and the EU core countries as an explanation for increased support for PRR parties. Rodríguez-Pose et al. (2023) found that in Europe, poorer regions were more likely to vote for PRR parties than their richer counterparts. Besides Europe, they also took a regional perspective in the USA, where geographical living area played an important role in the relationship between economic decline and PRR. They found that members of disadvantaged groups living in predominantly white areas are more likely to vote for Donald Trump (PRR) than members of disadvantaged groups living in a more racially mixed area.

In contrast, Bergh & Kärnä (2022) and Stoetzer et al. (2023) found no evidence for the idea that income inequality lead to an increased PRR vote share. Bergh & Kärnä (2022) found that Gini inequality does not predict either left nor right wing populism. The authors assert that their result is extremely robust but, unfortunately, do not provide an explanation why their results contrast with those of most other studies on income inequality and PRR voting. One explanation could be that this study used country-level data, compared to individual level data. However, the authors did find that strict employment protection is associated with PRR vote share, meaning that stricter employment protection leads to an increased vote share of PRR. This stems from the idea that routine job workers

⁷ Ireland, Denmark, Sweden, the Netherlands, Finland, Austria, Belgium, Germany, UK, France and Italy.

⁸ Spain, Slovenia, Estonia, Czech Republic, Portugal, Lithuania, Slovakia, Latvia, Greece, Hungary, Poland, Croatia, Romania and Bulgaria

cling on to their jobs in fear of becoming unemployed, as with strong employment protection employers are more careful with hiring, at the expense of those in more insecure job positions. Stoetzer et al. (2023) tested four attitudinal mechanisms related to income inequality which could explain the relationship between income inequality and PRR voting: economic insecurities, trust in political elites, social integration and national identity. Their analysis revealed that none of these mechanisms adequately explains the impact of income inequality on PRR voting. Only trust in elites could give a partial explanation for the relationship. The authors acknowledge some methodological deficiencies, such as the measurements of the attitudinal mechanisms, which could have caused this contradicting outcome.

Household debt, job security and cultural backlash

Besides income inequality and related variables, four studies⁹ have looked at other economic events which drive people to vote for PRR parties, such as household debt and job security.

Ausserlandscheider's (2019) literature review emphasises how recent literature has focused on two phenomena when trying to explain the rise of far right populists: economic insecurity and cultural backlash. Economic insecurity, the term already broadly discussed in this scoping review, explains how economic changes, crises and technological innovation negatively affects groups in insecure socio-economic positions. Cultural backlash refers to the resentment that arises among more conservative individuals who feel threatened by progressive cultural changes. This resentment often draws them toward the nationalist and racist rhetoric promoted by PRR parties.

Gomez et al. (2024) studied the relationship between job insecurity and the rise of radical parties in Western democracies. They found that perceived job insecurity strongly predicted voting for PRL but not for PRR, while objective job insecurity had inconsistent effects across countries. Explaining the inconsistencies in outcomes, the authors argue that studies who did find support for these relationships used different research designs. Interestingly, this study also looked at control variables, such as age, education, gender and migrant background, showing that their influence on PRR voting varied per country. This may indicate that PRR voting behaviour are dependent on contextual factors and differ between countries. Similarly, Abou-Chadi & Kurer (2021) studied unemployment risk and PRR voting, arguing that unemployment risk affecting one household member can influence the entire household's PRR support. In addition, the authors emphasise that this effect may extend beyond the household. Interactions with other family members, friends or colleagues facing economic risk could influence someone to support PRR parties, although to a lesser extent than interaction with household members.

Lastly, Ivanov (2023) studied the relationship between economic insecurity and populist voting, and the mediating role of institutional trust. This study found that among economically insecure

⁹ Gomez et al., 2024; Ivanov, 2023; Abou-Chadi & Kurer, 2021; Ausserlandscheider, 2019

individuals, institutional trust had little to no effect on their voting behaviour – suggesting that for this group, economic insecurity is the primary driver of populist support. Contrarily, for the more financially stable group, trust in institutions played a more important role in shaping political preferences.

3.1.3.2 Health, well-being and welfare indicators and their relationship with PRR vote share

Health as a political determinant is a more recent topic in the literature, especially on how PRR parties have been effecting health through their policies. The chosen search strategy did not find papers on how health inequalities explain the rise of PRR, reflecting a gap in the literature. However, the search strategy did result in two papers which studied welfare and how they influence PRR voting behaviour. Vlandas & Halikiopoulou (2021) examined the moderating role of welfare state policies in addressing the insecurities that may drive certain, more vulnerable, social groups to support PRR parties. The study distinguished different groups: the unemployed, pensioners, low-income workers, employees on temporary contracts, individuals in large families and individuals who are disabled or permanently sick members of these vulnerable social groups. The results suggest that social welfare policies reduce the likelihood of these social groups to vote for PRR parties. This means that the extent to which certain vulnerable social groups experience insecurities is influenced by the extent to which their needs are met through social policies. Therefore, the researchers conclude that welfare state policies can effectively reduce support for PRR parties by directing their welfare policies at a broader range of vulnerable social groups. Silva (2024) has studied how subjective well-being relates to support for populists. Subjective well-being was operationalised by life satisfaction and happiness. The study found a link between life dissatisfaction and unhappiness and populist support, although the strength of this link varies across periods and appears to be mediated by other economic, cultural and social factors as well as by levels of political trust.

3.1.3.3 Education and its relationship with PRR vote share

The search strategy did not find any relevant papers which studied how education affects the likelihood to vote for PRR parties. This could reflect an underrepresentation of education in the literature of PRR voting behaviour. Snower & Bosworth (2021) highlight the importance of education in shaping political preferences. They argue that, generally, the higher educated are more tolerant and open to diversity compared to low-skilled workers, making them less likely to support closed policies such as immigration policies and nationalist policies. Besides this, building on Stubager (2013), which has been discussed in chapter 2 and explained how education predicts a person's authoritarian and libertarian values, one would expect that through higher authoritarian values, the lower educated are more likely to vote for PRR parties.

Summary: income, health and education as drivers of PRR.

The results of the first part of the scoping review have given several insights. First of all, income (inequality) and its effect on PRR voting has been widely studied, while health and education remain

underrepresented in the literature. Most studies on income (inequality) and PRR show a complex relationship with many mediating factors, while two studies did not find support for the notion that increased income inequality leads to increased PRR support. While no studies on health and PRR were found, a study on welfare policy and one on life (dis)satisfaction were included. Results of this part of the scoping review are summarised in table 7.

Income (inequality)	Results
Relative deprivation / economic insecurity	The disadvantaged, lower income groups experience relative deprivation and economic insecurity due to increasing inequalities, which drives them to vote for PRR.
Perceived status loss	Not only the disadvantaged, also the middle income and high status groups fear a loss of status due to increasing inequalities, which drives them to vote for PRR.
Punishment of mainstream parties / dissatisfaction with current government	Those in disadvantaged economic positions are dissatisfied with (mainstream) parties in the current government and punish them with losing votes and turning to PRR instead.
Social fragmentation	Increasing inequalities lead to polarising values and policy preferences between low income and high income groups. The low-income groups turns to populism as they often are in favour of more closed policies.
Country of living	For the EU core member states, PRR is more popular in regions that are more economically deprived compared to richer regions within the country. For peripheral member states, within-country comparisons are less likely as these countries compare their economic well-being with EU core member states, explaining increased PRR support.
Geographical living area	In the U.S., people in disadvantaged positions who live in a predominantly white living area are more likely to vote for PRR than people in disadvantaged positions who live in racially mixed living areas.
Job insecurity / unemployment risk	(perceived) job insecurity was a predictor for PRL voting, but not PRR. However, another study found that unemployment risk was a predictor of PRR, and this effect was even present for all household members if one person in the household faced unemployment risk.
Trust in elites	Trust in elites was a partial explaining factor in the relationship between income inequality and PRR voting. Another study found that this was especially important for voters in more secure economic positions. For those in insecure economic positions, their economic situation was de main driver for PRR voting.
Cultural backlash	Conservatives fear status loss due to progressive changes, which drives them to turn to PRR.
Welfare and well-being	

Welfare policies	Vulnerable social groups are less likely to turn to PRR when their needs are met through social policy.
Life dissatisfaction and unhappiness	Life dissatisfaction and unhappiness predicted PRR support, although it varies across time periods and is mediated by political trust and other economic, social and cultural factors.

Table 5 Summary of results scoping review on the effect of income, health and education on PRR voting.

3.1.3.4 The effect of PRR policies on income, health and education.

This section analyses how PRR policies have been affecting the public’s well-being in terms of income, health and education. Thus, the inverse relationship in contrast to the sections above is examined. First, we will discuss three selected studies¹⁰ that focused on PRR effect on economic factors, including household debt and income distribution. Subsequently, we will focus on Chueri (2023), which studied PRR’s impact on migrants’ rights to social benefits and Falkenbach & Greer (2021) who dedicated an entire book on how PRR has been influencing health and welfare policy. Lastly, two studies¹¹ have examined country-specific PRR education policies in Austria and Denmark, analysing the stance of PRR parties on education and their influence on shaping education policy.

PRR economic policies

Pan (2023) conducted a study on how populism has been affecting household debt in 30 countries worldwide. The study found that both right- and left-wing populist leaders reduce household debt by restricting credit supply. This stems from the notion that populists view financial institutions such as banks as part of the “corrupt elite”, making banks more cautious who, as a result, raise interest rates and limit loans. Additionally, PRR reduces household debt by increasing public debt and lowering taxes, boosting disposable income – although these policies are often unsustainable on the long-term.

The next study, Strobl et al. (2023), examined whether populist policies redistribute resources from the ‘elite’ to the ‘ordinary people’ when in office in Latin America and the Caribbean. The authors note that while Western populism is often right-wing, nativist and anti-immigrant, Latin American populism mainly focuses on reducing injustice and income inequality and primarily has a history of left-wing populists. However, the study found no link between populism and any changes in the income and consumption inequalities. They give three possible explanations for this result. First, populists may focus on winning over the “median voter,” or the voter with an average income, which is the largest voter group. As a result, their policies would primarily aim to please this group, rather than prioritizing a more equal distribution of income between the rich and the poor. Second, populists may simply replace the current “elite” with their own, which changes the individuals amongst whom the resources are distributed, but leaves overall inequalities intact. Lastly, some populist policies intended to reduce

¹⁰ Pan, 2023; Strobl et al., 2023; Rathgeb & Busemeyer, 2022

¹¹ Gruber & Schnell, 2023; Rasmussen, 2023

inequality, such as trade restrictions, might backfire and actually end up harming lower-income groups.

Rathgeb & Busemeyer (2022) studied the consequences of PRR on welfare policies. Generally, the populist radical right are not in favour of “pro-welfare” policies. PRR parties adopt an authoritarian approach regarding social policy, where the “deserving” – typically those who are seen as hard-working people – are prioritised. New social risk groups, including women, low-skilled and young people, and people with an insecure position on the labour market are seen as less deserving. Furthermore, PRR oppose to social investment policies while they, in line with their authoritarian ideologies, support workfare policies – policies that support the unemployed to participate in work, training or volunteering in return for social benefits. The only pro-welfare policies that PRR parties seem to support are those focused on spending for the elderly, aligning with their authoritarian view of “deservingness”.

PRR health policies

Chueri (2023) explored the nativist ideologies of PRR by studying how PRR parties exclude migrant groups from the welfare state, otherwise known as welfare chauvinism. The study examined two European events: how exclusionary social policies have influenced different migrant groups and how right-wing governments affect these migrants’ access to social rights, particularly when governing in coalition with PRR. The results show that asylum seekers were the primary target group out of all migrant groups when it comes to exclusion of social benefits, regardless of whether PRR parties were in coalition. However, PRR governments were stricter than mainstream right-wing ones in restricting social benefits for EU migrants, largely due to their EU-scepticism. Similarly, Falkenbach & Greer (2021) published a book on PRR health and welfare policies in global context. They identified six characteristics of PRR in health policy (table 8): liberal chauvinism, welfare chauvinism, conservative position, welfare populism, clientelism and anti-scientific stances. The key difference between liberal chauvinism and welfare chauvinism is that while liberal chauvinism aims to cut welfare benefits, welfare chauvinism expands welfare benefits. Both exclude migrants from having access to these benefits, restricting it to the native citizens. Clientelism means that parties trade goods and services in return for political support. The concluding results show that welfare chauvinism and anti-scientism were most characterising for PRR in the context of health policies, both being present in seven out of ten countries. Liberal chauvinism appeared in four countries and all of the other characteristics were present in some of the countries. Important to highlight is that one feature does not exclude the other, meaning that these characteristics can go hand-in-hand and that there is no clear-cut description of PRR’s health rhetoric and policy. Some PRR parties show more welfare chauvinistic characteristics in shaping their health policies, while others are more liberal chauvinistic.

Concept	Hypothesis
Welfare chauvinism	“This hypothesis suggests that the PRR increases generosity and exclusiveness.”
Liberal chauvinism	“This hypothesis predicts that the PRR in power will reduce generosity and increase the exclusiveness of benefits with a special emphasis on migrants.”
Conservative position	“This hypothesis predicts that when a PRR politician joins a coalitional government wherein s/he assumes the minority role, the PRR will adopt the Conservative position of reducing generosity for all.”
Welfare populism	“This hypothesis proposes that when in power, PRR politicians will communicate their animosity towards the welfare state and create policies that are beneficial to the “common man” as opposed to bureaucrats or migrants.”
Clientelism	“The administration of programmes would become more clientelist under PRR politicians.”
Anti-scientific	“the PRR is still more likely to act on arguments with no scientific validity than other parties”, and secondly “the PRR will undermine science more than other parties, above all, by starving research and education of resources but also by misusing scientific resources like advisory positions”

Table 6 Overview of six hypotheses from Falkenbach & Greer (2021, p.4).

PRR education policies

Welfare chauvinism is not only present in health, but also in the Danish People’s Party (DF) education policy (Rasmussen, 2023). This is evident through the parties’ opposition to English-taught study programs in higher education and their restrictions on international student’s access to government student funds. In an attempt to win back votes from the DF mainstream parties have taken a similar stance on immigration, as DF has played an important role in government, making nativist populism a standard in Danish politics. While authoritarianism is present, it’s less pronounced in education policy, as both DF and NRP, a smaller Danish PRR party, voted for less state control. However, education policy is not a main topic for PRR in Denmark; their success mainly stems from their broader nativist and populist positions.

Gruber & Schnell (2023) examined Austrian PRR’s (FPÖ) educational positions and influence on policy between 1990 and 2020. They found that, although education is often assumed to be of little significance to PRR, it has become increasingly important for FPÖ. The results show that the party tackles educational cases in line with the core ideologies. To start, FPÖ accuses mainstream parties of manipulating and customising the education system to obtain party support, which is in line with their populist core. Also nativism and was clearly present in the party’s educational approach, characterised by FPÖ’s policy that obliges all non-native pupils to take a German language test prior to school enrolment and anti-Muslimism rhetoric in education. Unlike most parties, FPÖ adopts an anti-egalitarian stance on ‘merit’, where opportunities and rewards are distributed based on competence

and performance (rather than based on socioeconomic status). The party opposes measures that enable socioeconomically disadvantaged students to achieve merit by emphasising the value of formal assessment and supporting a system with highly stratified educational tracks. Over time, as the party grew, education became more central to their platform, and they successfully implemented policies that reflected their key positions.

Summary

Overall, PRR's core ideologies populism, nativism and authoritarianism are present in their economic, health and education policies. PRR seemed to have a positive effect on household debt as they decrease household debt when in office, although this is often due to unsustainable economic policies. Furthermore, PRR did not decrease income inequalities in Latin America and the Caribbean. When considering access to welfare benefits, PRR include the "deserving" – mainly working people, while excluding migrant. While different PRR parties exhibit varying combinations of all six traits¹² of PRR health policy, as described in Falkenbach & Greer (2021), welfare chauvinism and anti-scientism were the most prominent in shaping health policies. PRR educational policy stances, although usually not PRR's main focus, reflect their core ideologies, for example through the maintenance of their native language at all educational levels and anti-Islamism in education policy.

¹² welfare chauvinism, liberal chauvinism, conservative positions, welfare populism, clientelism and anti-scientism

4. International Comparative Case Study

This part will discuss the international comparative case study, including the methods and results.

4.1 Methods

In order to answer research questions 2 and 3, an international comparative case study is done by performing a time series analysis, including belonging auto- and cross-correlations. This section starts with an explanation on country-level data and why this study uses this type of data. Then, the study selection procedure is described, which consists of 7 European countries. After this, the data selection process is described, including selected variables. Lastly, the data analysis process is described.

4.1.1 Individual level data versus country level data

Important to note is the difference between individual level data and country level data. Individual level studies examine processes that happen for each individual separately, for example through surveys, and combine these separate observations. On the other hand, country level data use aggregated data to analyse the same processes for an entire population. Thus, country level studies can depict broader societal trends. In the context of PRR voting, Oude Groeniger et al. (2022) argue that population health concerns, not individual health, drives votes for populist parties. On that note, this study focuses on the indicators at a population, or country level.

4.1.2 Country selection

A number of selection criteria are taken into account for this study. Firstly, in recent years, PRR parties have become substantially more popular in Europe, making it a relevant geographical area. Secondly, PRR beyond Europe takes a different form than European PRR. PRR policies and ideologies differ between high and low income countries, or, more broadly, between European and non-European countries (Kaltwasser & Zanotti, 2023). For example, PRR in Chile, Brazil, India and Turkey show neoliberalist ideologies, additional to nativism, authoritarianism and populism that are dominant in European PRR. In Europe, PRR discourse defines immigrants, or non-natives, as the “out-group”. In non-European countries, these out-groups are often “the progressive left” or groups that follow a religion different than the main religion in that country. In the case of Brazil and Chile, the “in-group” are the Christians, thus the group who according to PRR are more deserving of state benefits. In Turkey the in-group are the Muslims, while other religious minorities are defined as the out-group. In India, a similar phenomenon is occurring based on religion. Here, the Hindus are the in-group, while Muslim minorities and progressive elites are set as the out-groups (Kaltwasser & Zanotti, 2023). To maintain country comparability, seven European high-income countries were selected with election-based political systems. Finally, PRR parties of the elected countries should have received a substantial amount of votes to be elected in national opposition or in government (office), except for one control case.

Based on the above criteria, the Netherlands, Italy, Austria and Hungary have been selected, which are countries that during the study period had a PRR party with a high vote share. For variation on the outcome variable, Denmark and Poland have been added to the selection as these countries have seen a recent decrease in PRR vote share. Lastly, Ireland has been added as a ‘control group’ as this country has two minor PRR parties with a constant low vote share. Based on the PopuList classification of PRR parties, version 3.0, the Party for Freedom (PVV) (NLD), Forum for Decocracy (FvD) (NLD), Lega (ITA), Fratelli d’Italia (ITA), FPÖ (AUT), Fidesz (HUN), Danish People Party (DF) (DNK) and Law and Justice (PiS) (POL) are classified as populist, far-right parties (Rooduijn, 2024).

4.1.2.1 Relevant country cases’ background

The first selected country is the Netherlands. The PVV has had an extraordinary role from 2010 – 2012 in a so-called Tolerance Coalition with two other (centre) right-wing parties. This role consisted of being formally outside of the (minority) coalition while offering the coalition majority vote in Parliament on legislative and policy proposals in exchange for stricter anti-immigration policies. This coalition fell after 18 months because the PVV did not want to commit to measures reducing the national budget deficit, leading to losing the subsequent elections. Ten years later, in 2023, the party won the Parliamentary elections, meaning that the party currently is in the governing coalition again. The other Dutch PRR party, FvD, has not been in office in the Second Chamber, but won 12 seats in the 2019 elections for the First Chamber, although in 2022, only one of these seats was left due to several internal conflicts. In the 2019 provincial elections, the party won 15% of the votes.

The second selected country is Italy. The PRR party Lega, formerly Lega Nord, rebranded in 2017. Before this, Lega Nord played several roles in government coalitions from 2001-2006 and 2008-2011. Lega also played a role in a coalition with the populist left party MS5, which collapsed in 2019, only one year after the coalition started. Currently, another PRR party, Fratelli d’Italia, is the ruling party in Italy’s coalition after winning the 2022 national elections. This party emerged from a split from The People of Freedom Party. Before 2022, Fratelli d’Italia played a smaller role in the Italian centre-right coalition.

The third selected country is Austria. The Freedom Party of Austria (FPÖ) has played multiple roles in government after being founded in 1956. From 2000 – 2005 they have been in a coalition government with the Austrian People’s Party (ÖVP). Between 2017 and 2019, the FPÖ played a role in government again, yet due to an affair the coalition collapsed. In October 2024, the FPÖ won the national elections with more than 29% of the votes, meaning that, if other parties are open to form a coalition cabinet, it is likely that they will enter government for the third time.

The fourth country selected for this study is Hungary. Fidesz has been the biggest party in Hungary since 2010. Viktor Orbán, the leader of the party, has been president of Hungary since then, winning 5 rounds of national elections. An interesting note to add is that the European Parliament (2022) has

released that Hungary cannot be considered a full democracy anymore as elections are still held, but democratic norms are not present. The European Parliament now considers the country a ‘hybrid regime of electoral autocracy’.

The fifth country is Denmark. The Danish People Party (DF) was founded in 1995. For the first few years, the party remained relatively small. During the 2001 elections, DF won 12% of the votes and 22 seats in parliament, making them the third largest party. Their vote share increased each election until the 2019 elections, with their highest vote share at 21.1% at the 2015 elections. After this victory, DF decided to not enter government in return for stricter immigration policies. Their vote share decreased at the 2019 election (8,7%) and even further at the 2022 election (2.6%).

The next country is Poland. The PRR party Law and Justice (PiS) was founded in 2001. In 2005, the party won the national elections, with their leader becoming the president of Poland until 2007. Between 2007 and 2015 the party remained in opposition. After the 2015 elections, the party won the elections again and regained presidency. After a loss of votes during the 2023 elections, PiS went back in opposition.

Ireland is unique in the sense that PRR has remained unpopular. Irish Freedom Party (IFP) and The National Party are two small Irish PRR parties. The Irish Freedom Party was founded in 2018. During the 2024 elections, the party received 1.7% of votes. The National Party was founded in 2016. The party formed an alliance with two other minor parties for the 2024 elections. Combined, this alliance received 0.80% of votes, with 0.30% belonging to The National Party. This country is included as a control group in order to analyse how the trends have been income, health and education have been doing and whether these trends explain why PRR is not popular in this country.

Country	PRR parties	Governing role in national government	Election-based system	Vote share
The Netherlands	PVV FvD	2010-2012 and 2024- present 2019-2022 in First Chamber	Yes	Increase
Italy	Lega Fratelli d’Italia	2001-2006, 2008-2011, 2018- 2019 2022- present	Yes	Increase
Austria	FPÖ	2000-2005, 2017-2019	Yes	Increase
Hungary	Fidesz	2010 - present	Yes	Increase
Denmark	Danish People Party	2001-2011 minority government	Yes	Decrease
Poland	Law and Justice	2005 – 2007 2015-2023	Yes	Decrease

Ireland	-	-	Yes	Constant
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Table 7 Country selection details.

4.1.3 Data selection

The initial aim of this study was to study how (a trend in) inequalities would explain the increase the increase in PRR vote share. This is partly covered by the literature study. Unfortunately, not all variables could be exported with income-based splits, which highlight the inequalities. For two variables, one representing income and the other health, the inequality split was included. This means for those variables the relationship between income and health inequalities and PRR vote share can be analysed. For the other variables, this was not possible and therefore these variables will show how a trend over time relates to PRR vote share, without any information on inequalities. A full overview of the selected variables and belonging database are illustrated in table 4.

PRR Vote Share

To measure the PRR electoral performance of the four countries, data from the dataset [‘Votes for Populists’](#) are used (Grzymala-Busse & McFaul, 2024). This dataset contains data on populist parties’ electoral performance between 1945 and 2023 in Europe and some Latin American and Asian countries. The dataset is based on electoral outcomes and populist party characteristics, such as whether the populist party’s leader was president during the elections.. The variable used for this study is ‘percentage’, which indicates the percental vote share received by the PRR party per national election. The outcome of the Austrian election in 2024 was not included in the dataset and has been manually added, based on information on this vote share from The Guardian (Cole, 2024). The PRR party Fratelli d’Italia is not included in the dataset and therefore has also been manually added. Data on the Fratelli d’Italia vote share was obtained from Statista (2024). Lastly, the Dutch PRR party FvD was not included in the dataset as it did obtain high vote shares in the national elections.

Trends in Income and Income Inequality

The variable [real household disposable income](#) per capita of households is obtained from OECD and is used as the measure of income status. Data are available from 2007 to 2023 and are updated quarterly. Real disposable income equals the average household income received after deduction of taxes and inclusion of social benefits. It is adjusted for price changes and measures people’s economic wellbeing.

The second income variable is Gini-index, which indicates income inequalities within a country. Data on the Gini-index from the selected countries are obtained from the database [Health for All](#) from the World Health Organisation. The WHO uses values between 0 and 100, with a Gini of 0 meaning perfect equality, while a Gini of 100 means that 1 person holds the entire income of a country, thus perfect inequality. Data from a longer time period are used in order to analyse trends in income

inequality. For all countries, data from 1995-2021 are available. The Health for All dataset is based on several sources of data, including country experts, WHO/Europe's technical programmes and partners organisations. This makes it hard to provide a sample size of the provided data. The data are based on reported data, not estimates, making it more valuable and reliable. The data on the Gini-index is representative for the entire population.

Trends in Health and Health Inequality

In order to cover health and health inequalities, multiple variables have been selected for this study to operationalise health in general. The World Health Organisation (WHO) provides [data on global health inequalities](#) (WHO, n.d.). The data on self-reported health status and income level are reported by the Organisation for Economic Co-operation and Development (EOCD). For European countries, the organisation has used data from the Eurostat database, which have been obtained through [the European Union Survey on Income and Living Conditions](#), which is measured annually. The data represent all the country's private household members and the sample has been selected at random.

The first variable 'perceived health status as good or very good' has been chosen to measure a population's health status. Self-reported health status reliably measures actual health status, according to Kaplan and Baron-Epel (2003). For this study, data disaggregated by economic status, thereby showing health inequalities between the poorest quintile and the richest quintile of a population, is the most relevant. Data are available from 2004 to 2022. Next to perceived health status (PHS), this study includes two objective measures, namely 'life expectancy at birth' and 'health adjusted life expectancy (HALE)'. Both variables are obtained from the [WHO Health for All database](#), just as the Gini-index. For life expectancy, data are available from 1969 to 2021, slightly varying per country. For HALE, data is available from 2000 to 2019, although during this time period only four measurements were made. Lastly, this thesis uses one more self-reported measure, namely [self-reported unmet needs for healthcare](#). The data are obtained from Eurostat, which obtains data through a yearly survey that represents the total population living in private households. Data are available from 2008-2023. This variable shows the share of the population older than 16 that have reported unmet medical care needs due to three accumulated reasons: financial reasons, distance or waiting list. This variable could reflect dissatisfaction with institutions and therefore is relevant to measure for this study.

Trends in Education

For education, this study looks at the countries' educational attainment level. We use data from [Eurostat \(n.d.\)](#), which are measured through a quarterly EU Labour Force Survey and represents the total population living in private households. The variable used for this study is '[Tertiary educational attainment by sex](#)' and is obtained from the dataset "[Educational attainment level and transition from education to work](#)". Data are available from 2000 to 2023. This variable shows what percentage of the population has finished higher education. Until 2013, attainment of tertiary education refers to the ISCED 1997 levels 5 and 6. From 2014 onwards, attainment of tertiary education refers to the ISCED

(International Standard Classification of Education) 2011 levels 5-8. To clarify these classification levels of ISCED 2011, an example of the Dutch education system is used. Attainment of level 5 refers to the attainment of a bachelor's degree, either at HBO or WO level. MBO falls into level 4 and therefore, is not included in the classification of tertiary education.

Variable	Database
PRR vote share	Votes for Populists database - Stanford University
Disposable income	Household Indicators Dashboard - OECD
Gini-index	Health for All Database - WHO
Life expectancy	Health for All Database - WHO
Health adjusted life expectancy (HALE)	Health for All Database - WHO
Unmet health care needs	Eurostat
Perceived health status (PHS)	Health Inequality Data Repository - WHO
Attainment of higher education	Eurostat

Table 8 Overview of selected variables and belonging databases.

Excluded: distrust in institutions

As outlined in the theoretical framework, distrust in institutions is a key driver for voting for PRR. Ideally, distrust in institutions would be included in the analysis as a predictive variable of vote share. However, no suitable annual data was found for this purpose. Data from the European Social Survey (ESS) on trust in political institutions was considered, but ultimately excluded for several reasons. First, the ESS provides data at the individual level, whereas the other variables are presented as annual average scores at country level. Converting the ESS data into the same type of data as the other variables would be time consuming, and considering the time constraints of this thesis, this was hard to realise. Besides this, many existing studies on trust in institutions and PRR voting behaviour already rely on the ESS data. Including this data in the analysis would like be a repetition of other studies without offering new insights.

4.1.4 Reliability and validity

All data are obtained from large, reputable institutions, such as the World Health Organisation or Eurostat, which is why this study assumes these sources are reliable. The institutions that obtained data through surveys, such as the EU Labour Force Survey, had a large sample size which increases the representative quality of the sample. Data from repeated measurements are used to portray trends, which enhances the reliability of the measurement. Since all databases contain samples that represent the whole population of a country, validity is not harmed when combining multiple datasets. Yet, there are some measurement limitations per dataset that could influence the validity of this study. For

example, the accuracy of the life expectancy and HALE, although powerful indicators for population health, are highly dependent on the quality and availability of a country's data on morbidity and mortality (European Health Information Gateway, n.d.). The quality of this information can vary between countries, since procedures for data registration and processing vary between countries. Besides this, these two variables do not contain a distribution dimension, and possible disparities within a population remain invisible. Variables such as 'perceived health status' and the variable used to measure education status and trend, are based on surveys. These are self-reported measures, which could reflect memory and social desirability, possibly harming validity and reliability.

4.1.5 Time Series Analysis

Before the start of the analysis, the data have been cleaned and combined into one dataset. For all the datasets, all countries, except the Netherlands, Italy, Austria and Hungary, Denmark, Poland and Ireland, have been deleted in Excel. In Excel, rows or columns can easily be deleted, leaving a clean dataset with only relevant variables and countries. After this step, all datasets were imported into the statistical analysis software program RStudio. All datasets got the label 'Country' on the variable name for country and 'Year' for the variable year. In this way, all variables for country and year have the same label, which allows the datasets to be merged. When necessary, names of other variables have been renamed before merging the datasets.

Ideally, a multiple linear regression was done to analyse the correlation between income, health and education as predictors and PRR vote share as outcome. Yet, such regression techniques assume that the residuals of a value are uncorrelated, also known as the assumption of independence (Nelson & Lewis., 1998; Schaffer et al, 2021). For this analysis, the assumption of independence is violated due to the fact that data from a certain measurement is time-related to the prior measurement. This indicates that the measurements of a single variable are autocorrelated. The presence of autocorrelation can be tested with the Durban-Watson test (Field et al., 2012). The results of the Durban-Watson are presented in [appendix 1](#). Based on these results, it is not statistically justified to perform a linear regression as almost all the variables have autocorrelated measures. Therefore, a time series analysis was chosen to answer research questions 2 and 3. As a first step, and to answer research questions 2 and 3, plots are given of each variable which depict the trend. After this, for each country and for each variable, the autocorrelations are given. Lastly, for each country separately, cross-correlations are measured. These show how strongly and in which direction one independent and the dependent variable are correlated. For the full analysis plan, see [appendix 2](#).

4.1.5.1 Autocorrelation

Autocorrelation (ACF) measures how strongly the measurements of one time series are related, or in other words, how much a previous measurement predicts the next measurement of the same variable. Considering ACF is crucial when interpreting cross-correlations as a high ACF can lead to false, high cross-correlations. ACF is measured by creating a time series in R of a certain variable, for each

country separately to allow for comparability. A time series is a sequence of data points collected at regular intervals and arranged in chronological order (Schaffer et al., 2021). According to this paper, time series usually have three characteristics: non-stationarity, autocorrelation and seasonality. Stationarity refers to the constancy of the mean, variance and that the autocorrelations between lags are also constant. For the second characteristic, autocorrelation, the values will be provided. The last characteristic, seasonality, refers to variation in the data which happen at regular time points (Schaffer et al., 2021). For example, perceived health status may be lower during winter as people are more prone to viruses such as the flu. Thus, seasonality can depend on certain causes, such as the weather or business processes. As this thesis has yearly measurements, seasonality is rare (Schaffer et al., 2021). For this reason, it is not necessary to detrend the times series.

With these time series, autocorrelations of each variable have been calculated. RStudio created lags, which are time differences between observations in a time series. Lag 1 refers to the time difference between a time point and the immediate following time point (e.g. between 2006 and 2007), lag 2 refers to the time difference between time point 1 and second following time point (e.g. 2006 and 2008), and so on. Lag 0 always shows a high autocorrelation, as it shows how strongly the measures of the same year are correlated. The total amount of lags needed to give a complete overview of the autocorrelation is given by R and based on the $10 * \log(N/m)$, in which N is the amount observations and m the amount of time series. Exceeding this amount of lags could lead to less meaningful or reliable results as the amount of time point pairs to compare decreases as each lag increases.

Autocorrelation is significant when it exceeds the 95% significance interval (Schubert et al., 2016; Dean & Dunsmuir, 2015), which in the figures is depicted by the blue dotted line. Positive autocorrelation at a certain lag means that if a value is higher than average, the preceding value is also likely to be higher than average. Contrarily, a negative autocorrelation means if a value is higher than average, the preceding value is likely to be below average.

The interpretation of autocorrelations requires specific criteria. This study classifies the autocorrelations into low, moderate or high autocorrelation categories. The first 5 lags are particularly important, as autocorrelations are expected to be stronger in years that are closer together and weaker in years that are further apart. Variables with fewer than 3 lags crossing the significance interval abundantly are classified as having low autocorrelation. Variables with 3 to 5 lags crossing the significance interval abundantly are classified as having moderate autocorrelation. Variables with more than 5 lags crossing the significance interval abundantly are classified as having high autocorrelation. A lag is considered to cross the significance abundantly if the difference exceeds 0.1 points.

4.1.5.2 Cross-correlation

Cross-correlation (CCF) measures how two times series are related, either direct or delayed. The cross-correlation provides the Pearson correlation between two time series. In this case, one independent variable is cross-correlated with the dependent variable vote share. Similar to the

autocorrelations, these cross-correlations are ran per country. The output of the cross-correlation analysis always gives positive and negative lags. The positive lags represent the influence of the dependent variable (y) on the independent variable (x) by assuming that y occurred before x. On the other hand, the negative lags represent the influence of the independent variable on the dependent by assuming that x happened before y. To study the effect of health, income and education on PRR vote share, we assume that x happened before y and thus focus on the negative lags. Lag 0 represents a direct effect, which represents whether there is a relationship at the same time period. A positive cross-correlation value at lag 0 means that the two variables are moving into the same direction at the same time point, although for this thesis this is not the most relevant lag as decline in income, health or education is expected to give a delayed effect on vote share. A negative cross-correlation value at lag 0 means that the two variables are moving into opposite directions at the same time point. The other lags all represent an opposing correlation with delay. Each lag represents a different length of the delay, with lag 15 having a larger delay than lag 5. In order to remain on the safe side when making conclusions based on the cross-correlations, slightly significant cross-correlations are still considered non-significant. Cross-correlation values that exceed the significance interval with less than 0.1 points are considered slightly significant.

4.1.6 Data management and ethics

Since all data used in this study is openly accessible, a data management plan has no additional value. The R script and final dataset are openly available, which enhances transparency and reproducibility of this study. As all data used for this study are publicly available and this study did not involve the collection of personal or individual-level data, ethical approval was non-mandatory

4.2 Results

In this section, the results of the international comparative case study are presented. First, the section starts with the time series plots, which show the following trends of the variables of the selected countries: PRR vote share, disposable income, Gini-index, life expectancy, health life years (HALE), perceived health status and education. In the following part, the autocorrelations and cross-correlations are presented. The autocorrelations are important to keep in mind when interpreting the cross-correlations. The cross-correlations show how strongly and in which direction a certain independent variable and the outcome variable, PRR vote share, are correlated.

4.2.1 Time series PRR vote share

This first section gives insights into the trends of PRR vote share of the selected countries, as depicted in figure 5. Over the past two decades, all countries have seen an increase in vote share. In two of these countries, Denmark and Poland, PRR have also seen a loss in vote share in the last decade

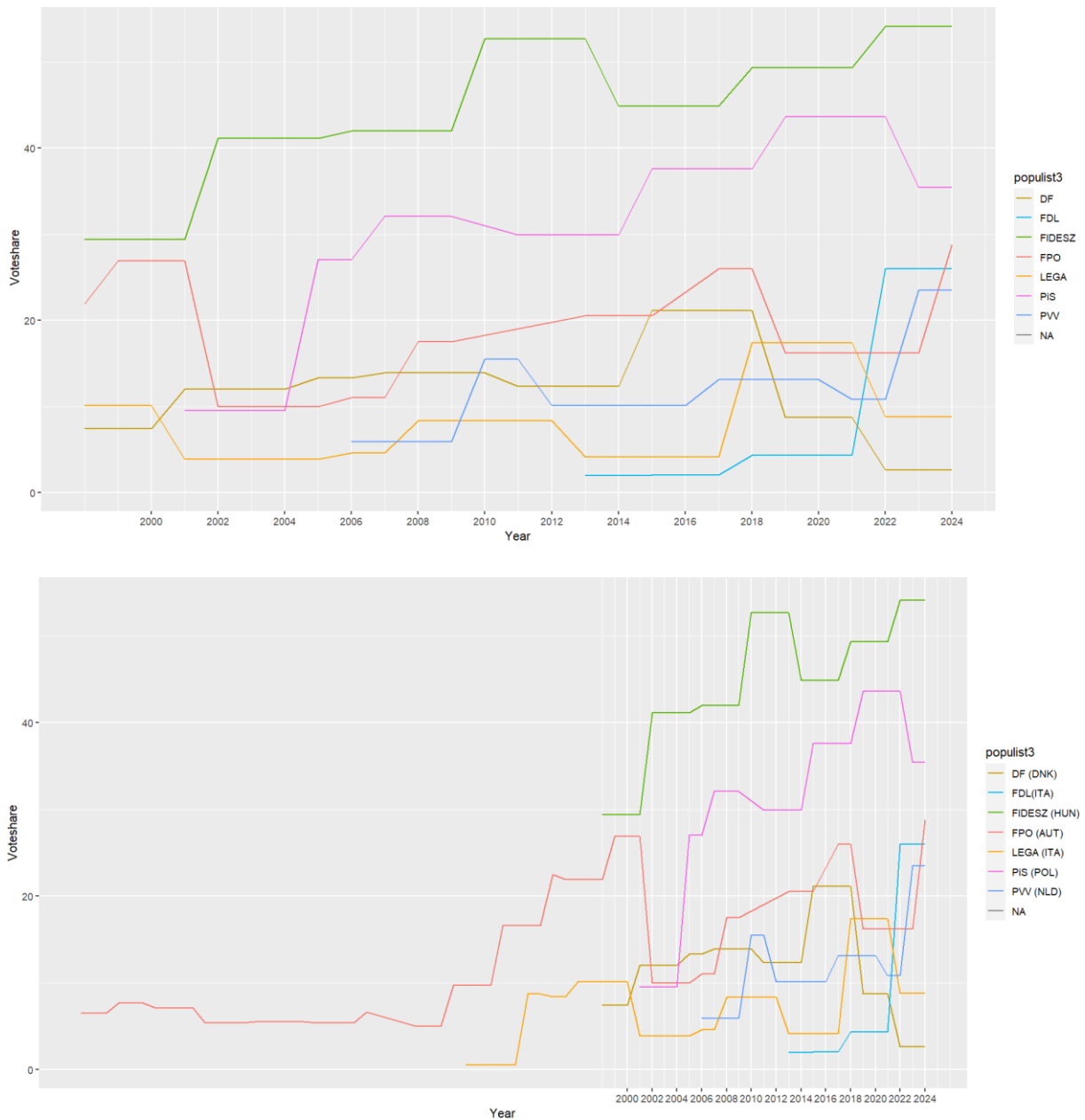


Figure 4 Time trend of PRR vote share from selected countries.

The first party, DF, belongs to Denmark and shows an increase in vote share between 2000 and 2018. After 2018, DF's vote share notably decreased from 21.1% to 2.6% after the 2022 elections. The second party, FDL, belongs to Italy and is a relatively new party. The first years after being founded (2013-2021) the party remained at a low vote share (2-4%). After the elections in 2022 their vote share spiked up to 26%, which it is still at in 2024. Italy's other PRR party, Lega, shows an opposite trend compared to FDL. Between 2001 and 2017, their vote share remained below 10%, ranging from 3.9%-8.3%. After the elections in 2018, their vote share went up to 17.4%. In 2022, when FDL's vote share went up substantially, Lega's dropped back to 8.8%. Combined, the parties (and thereby PRR in Italy) currently hold 34.8% of the votes. Fidesz, the Hungarian PRR party, is the largest PRR party of the

selected countries. In 2000, the party’s vote share was at 29.4% and in the following 24 years went up to 54.1%. The next party is FPÖ, Austria’s PRR party. This party has shown some fluctuations in their vote share, having a vote share of 26.9% in 2000 and dropping to 10% after the elections in 2002. 2000 was their lowest point in terms of vote share, as it gradually increased back up to 26% in 2018. After the government fell in 2019, new elections were held and FPÖ was punished, losing 10% of their votes. Yet, in 2024, the party received 28.8% of the votes, obtaining their highest vote share ever. PiS, Poland’s PRR party has also seen a rapid increase in vote share over the past 20 years. The party started at a vote share of 9.5% after being founded in 2001. This gradually increased up to 43.6% in 2022. The party faced a decrease to 35.4% after the elections in 2023. The last party is the PVV, which is the largest PRR party of the Netherlands. The party received 5.9% of the votes in 2006, the year the party was founded. The party’s vote share remained between 10-15% between 2010 and 2022. During the elections in 2023, the party’s vote share spiked up to 23.5%, making it the largest party of the Netherlands. Ireland is not included in the graph since data on vote share was not included in the obtained dataset. The country’s total PRR vote share remained below 2% of total votes between 2000 and 2024. For full details and numbers on the vote shares, see [appendix 5](#).

4.2.2 Time series income, health and education

Income – Disposable income

Figure 6 depicts the changes over time in disposable income of the selected countries. Most countries have seen an increase in disposable income between 2007 and 2023, except Italy and Austria.

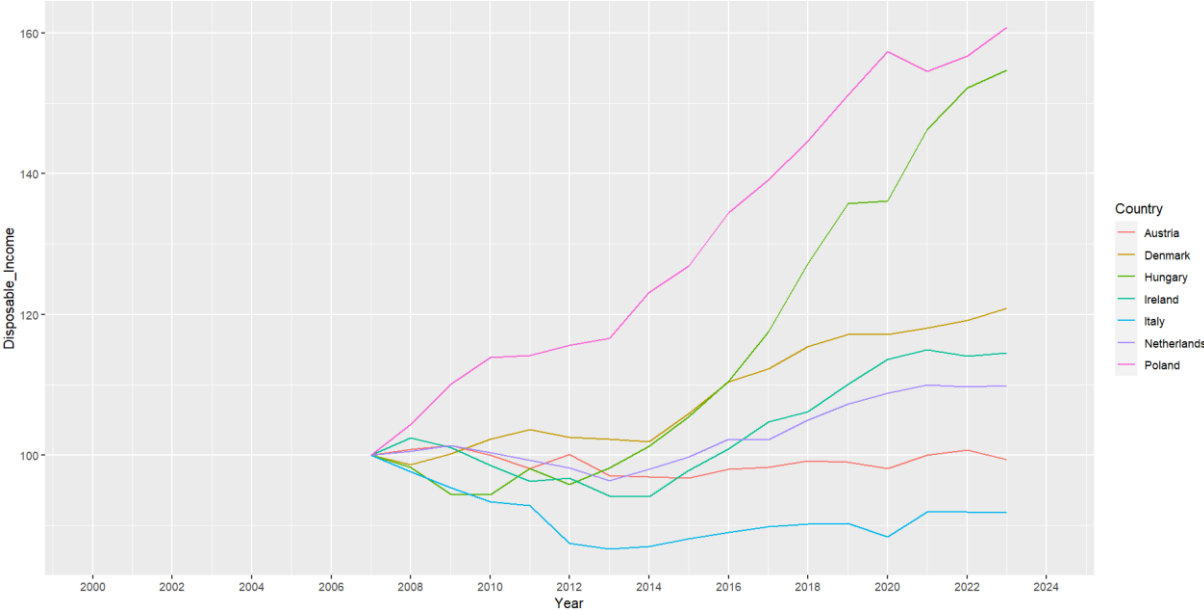


Figure 5 Time trend disposable income of selected countries.

For this variable, 2007 is taken as a starting point and all countries are given the value 100 in this year. Thus, this graph does not show the absolute values of disposable income, but shows how much it has

changed compared to the starting value in 2007. Italy shows a drop in disposable income to 91.8 in 2023, meaning that Italian households had less money to spend compared to 2007. For Austria, disposable income remained quite stable over time, with a slight decrease in disposable income between 2012 and 2022. For the other countries, disposable has increased after 2007. Especially Hungary and Poland have shown a large increase, respectively to 154.73 and 160.8 in 2023.

Income – Gini-index

Figure 7 shows the changes over time in Gini-index of the seven selected countries. Overall, the Gini-index of most countries remained constant during 2000 and 2021/2022, as only slight fluctuations are visible.

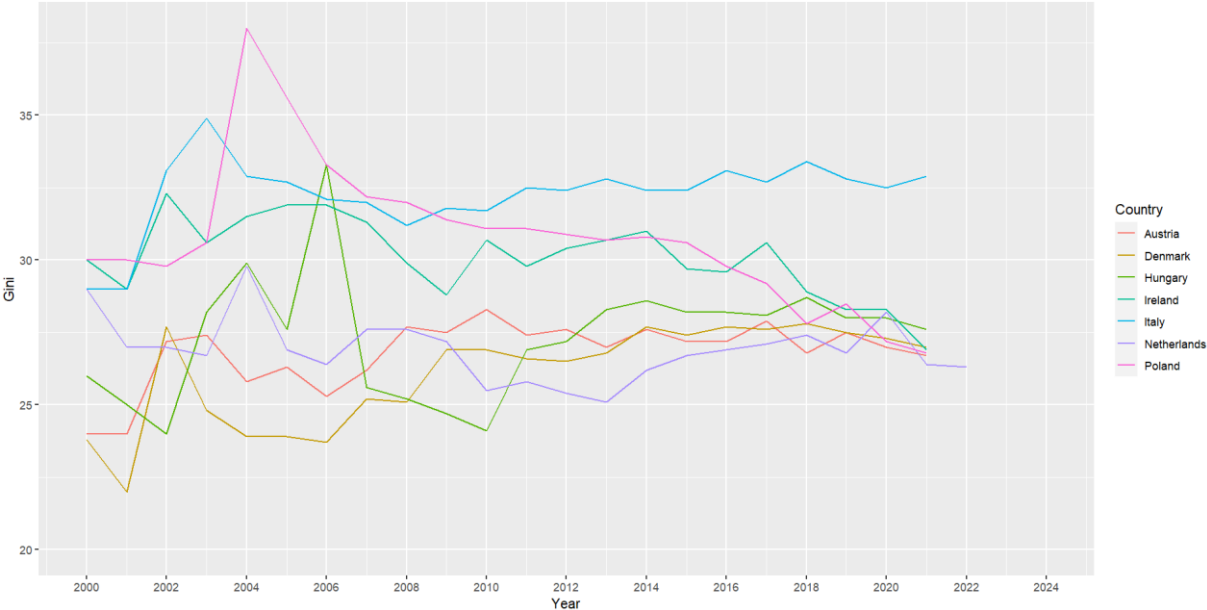


Figure 6 Time trend Gini-index of selected countries.

Austria, Italy and the Netherlands show a relatively constant Gini over the past decades. A notable result is the large decrease of Poland’s Gini between 2004 and 2022, meaning that the country has become more equal during this period. Also Ireland has seen their Gini drop from 33.0 to 26.9. Denmark has shown an opposite trend compared to Poland and Ireland, showing an increase in Gini from 20.0 in 1995 to 27.0 in 2021. This means that in Denmark, distribution of income has become less equal over the past decades. Hungary also shows a remarkable trend, first showing a decrease between 1999-2002 and then an increase back to 33.3 in 2006, showing the country’s highest income inequality. After 2006, the country’s Gini dropped back down to 24.1 in 2010. Since then, the country’s Gini increased back up and remained around 28.0.

Health – Life Expectancy

Figure 8 shows the trend in life expectancy between 2000 and 2022. All countries show a similar trend, all having an increase in life expectancy from 2000 until 2019.

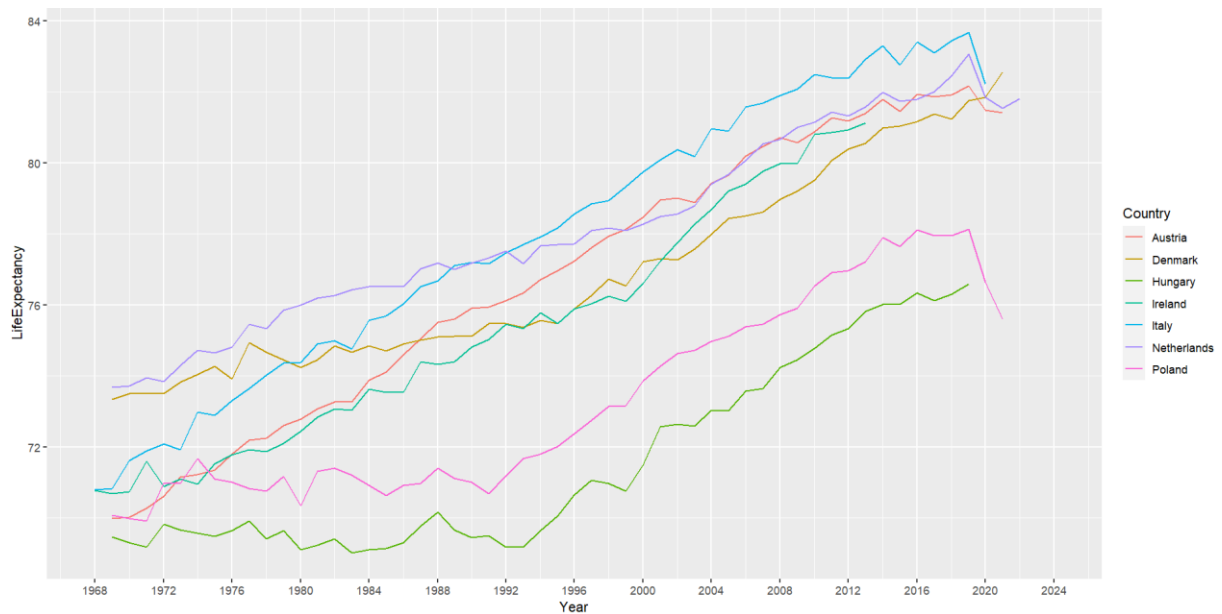


Figure 7 Time trend of life expectancy of selected countries.

In 2019, the COVID-19 pandemic started in Europe, explaining the drop in life expectancy in almost all the countries. Only Denmark did not see a drop after 2019. All countries show a similar growth in life expectancy, although between countries the life expectancy differs. Hungary and Poland show the lowest life expectancy, respectively 76.61 and 78.514 years in 2019. For the countries with the highest life expectancy, Italy and the Netherlands, the life expectancy respectively amounted 83.67 and 83.07 years in 2019.

Health – Healthy Adjusted Life Expectancy (HALE)

HALE, the life expectancy in good health, has been measured at four time points: in 2000, 2010, 2015 and 2019. The trend lines show a similar result as the trend of life expectancy, with Italy and the Netherlands showing the highest HALE, while Hungary and Poland show the lowest.

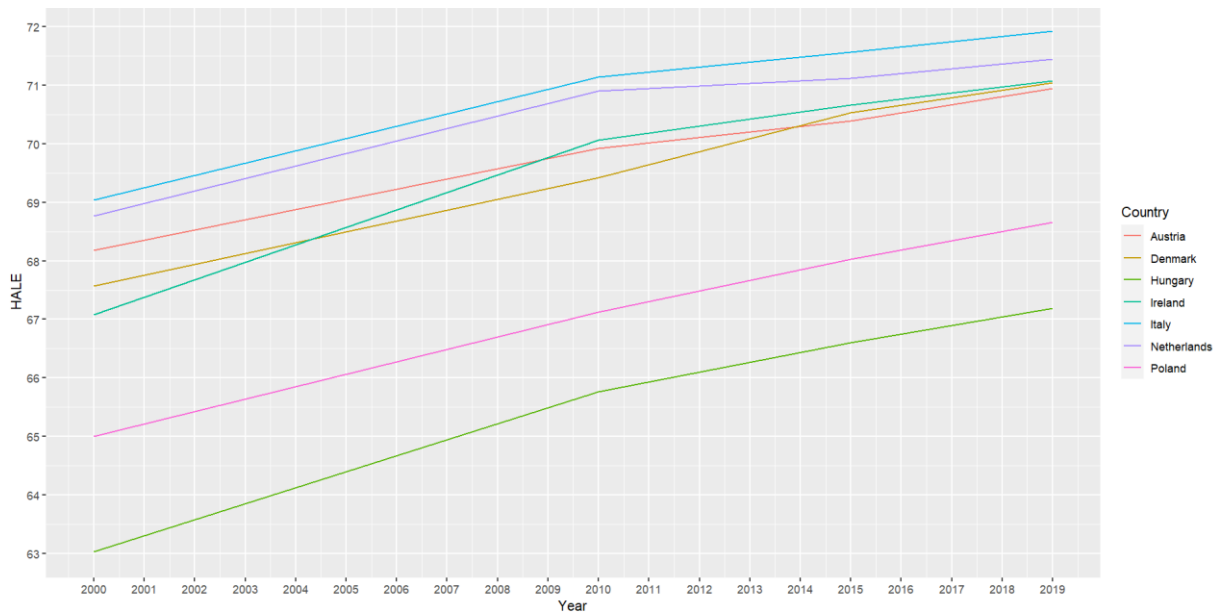


Figure 8 Time trend of HALE of selected countries.

Health – unmet healthcare needs

The following indicator is unmet healthcare needs, which has been measured between 2008 and 2023. For most countries, the percentage unmet healthcare needs have been stable between the selected time period.

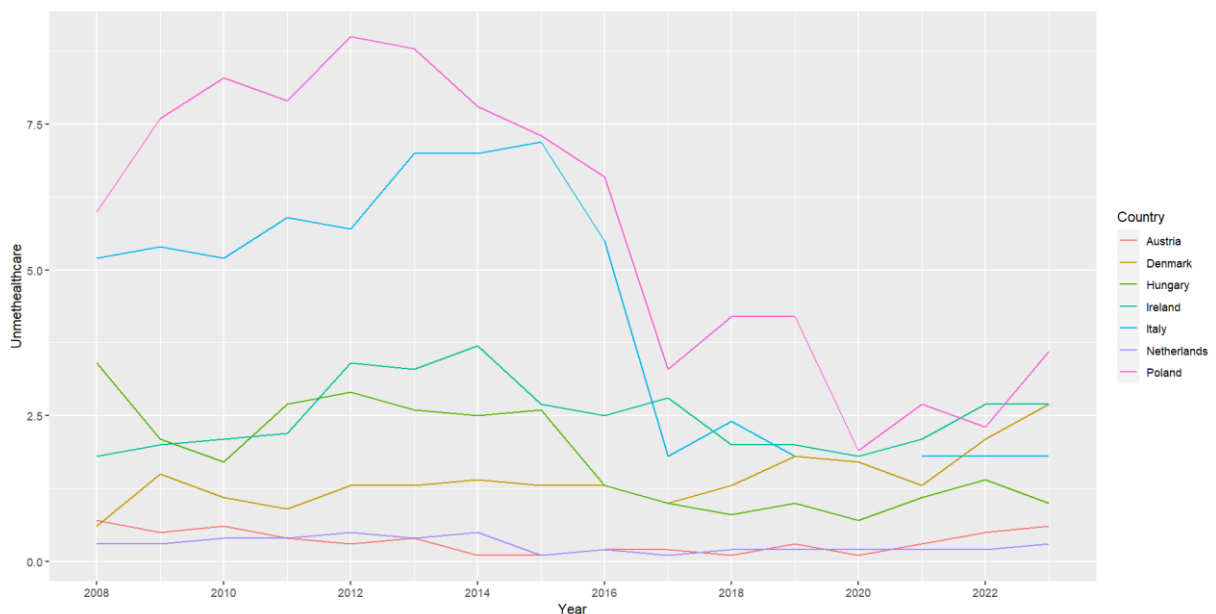


Figure 9 Time trend of unmet health care needs of selected countries.

Poland and Italy have seen a decrease in unmet healthcare needs, both showing a decline of approximately 5.0%. Another remarkable result is that in all countries, unmet health care needs have

remained low in the selected time period. After 2016, unmet healthcare needs have been below 5.0% in all selected countries.

Health – Perceived health status, split by income

Figure 11 depicts the perceived health status as good or very good (PHS) of all selected countries between 2004 and 2022. The top line shows the PHS of the richest quintile of the population, while the bottom line shows the PHS of the poorest quintile of the population. Thus, inequalities between these two groups are shown by the grey area between the two lines.

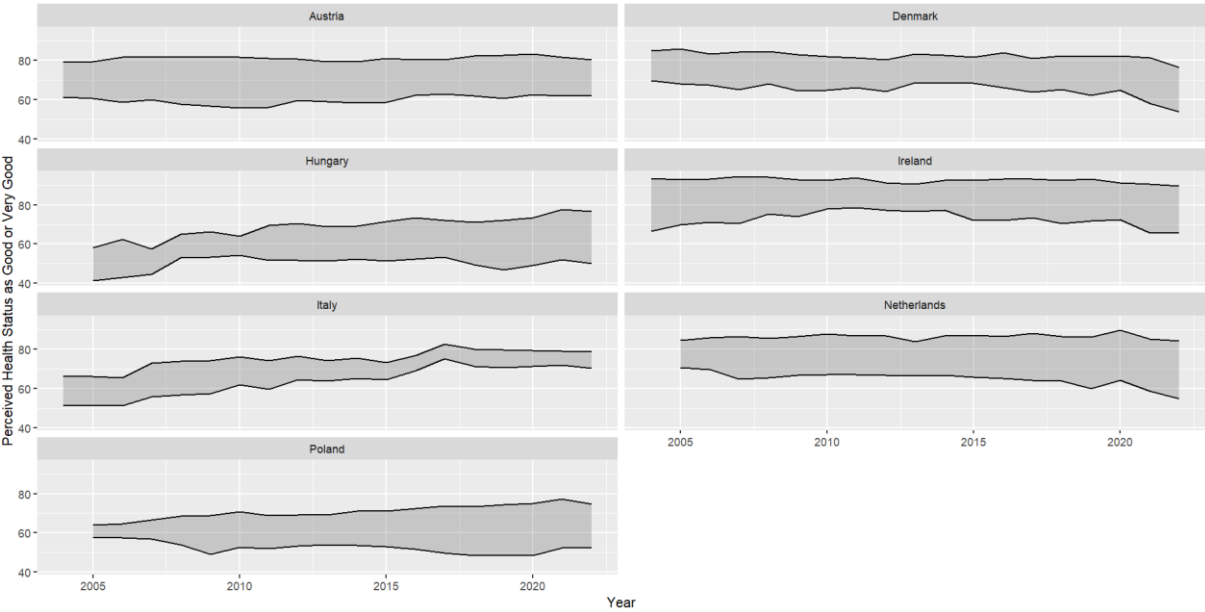


Figure 10 Time trend of perceived health status as good or very good per country, split by income.

In Austria, inequalities seemed to have increased between 2004 and 2012, but decreased again after 2012. In Austria, the PHS of both income groups seemed quite constant in the past two decades. Denmark has seen a slight decrease on PHS in general during the selected period, but inequalities seemed stable until 2021. In 2021 and 2022 the area between the poorest and richest quintile increased, reflecting an increase in health inequalities. In Hungary, health inequalities increased as the richest quintile showed a greater increase in PHS than the poorest quintile. For Ireland, the richest part of the Irish population seems satisfied with their health, with a high score on PHS as good or very good. Health inequalities have fluctuated, showing a decrease in the gap in PHS between the poorest and richest quintile between 2004 and 2013. Between 2013 and 2022, these differences in PHS per income groups seemed to have grown again. The general PHS of the Italian seems to have improved between the selected time period. Compared to other countries, health inequalities seem smaller in Italy. Besides this, health inequalities within the country seemed to have decreased between 2012 and 2022. In the Netherlands, health inequalities seem to have increased between the given time period. In 2022, when the health inequality was at its highest point, the differences between the two groups was

29.2%. 54.9% of the poorest part of the population rated their health as good or very good, while for the richest group this was 84.1%. Poland has also seen a remarkable increase in health inequalities between the rich and the poor during the selected time period. In 2020, the differences in health between the two groups were the largest, with a difference of 26.7%. In 2021 and 2022, these differences slightly decreased again.

Education

Figure 12 shows the trends of the percentage of the population that has obtained higher education. As shown by the trend lines, all countries have seen an increase in the percentage of the population that has obtained a higher education diploma.

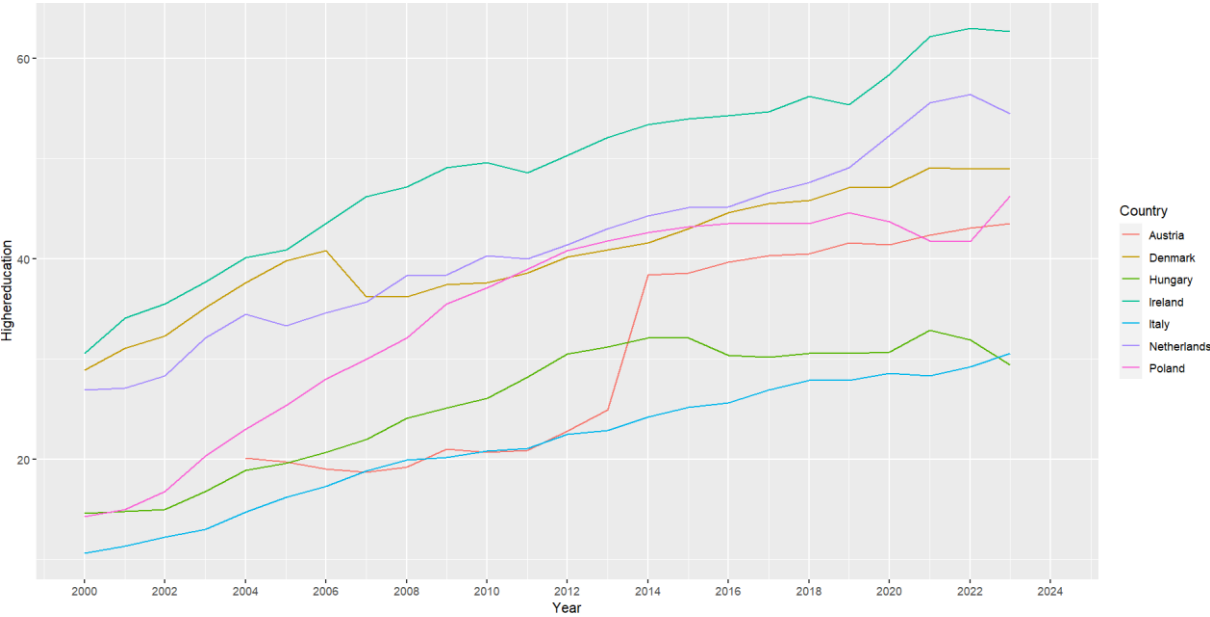


Figure 11 Time trend of attainment of higher education of selected countries.

Especially Poland has seen a remarkable increase, with 14.3% of the population attaining higher education in 2000 to 46.3% in 2023. Differences between countries are also notable. Ireland and the Netherlands show the highest rates of tertiary educational attainment, while Italy and Hungary remain the lowest educated countries. The sharp rise in percentages observed in Austria between 2013 and 2014 can be attributed to the change of 1997 ISCED classification to the 2011 version from 2014 onwards. In contrast, the percentages of the other countries appear to be less impacted by this change.

4.2.3 Autocorrelation: time-relatedness of a time series.

In this part, the autocorrelations of each variable are discussed. The autocorrelation of each variable is measured individually per country, but an overall result for all countries will be given. Full details are presented in table 7. Overall, life expectancy and education show high autocorrelations and interpretations of cross-correlations should be taken with caution. The same counts for disposable income, unmet health care needs and vote share, although to a lesser extent. Perceived health status as

good or very good shows low to moderate autocorrelations. For the Gini-index, autocorrelations are generally low. The autocorrelation per variable and per country can be found in [appendix 6](#).

	The Netherlands	Italy	Austria	Hungary	Denmark	Poland	Ireland
Vote share	Low autocorrelation	Moderate autocorrelation	High autocorrelation	Moderate autocorrelation	Low autocorrelation	Moderate autocorrelation	High autocorrelation
Disposable Income	High autocorrelation	Low autocorrelation	High autocorrelation	High autocorrelation	High autocorrelation	High autocorrelation	Moderate autocorrelation
Gini-index	Low autocorrelation	Low autocorrelation	No autocorrelation	Low autocorrelation	Low autocorrelation	High autocorrelation	Low autocorrelation
Life expectancy	High autocorrelation	High autocorrelation	High autocorrelation	High autocorrelation	High autocorrelation	High autocorrelation	High autocorrelation
Unmet health care needs	Low autocorrelation	Moderate autocorrelation	Moderate autocorrelation	Moderate autocorrelation	Low autocorrelation	High autocorrelation	Moderate autocorrelation
PHS – Quintile 5	No autocorrelation	Low autocorrelation	Moderate autocorrelation	Moderate autocorrelation	Low autocorrelation	Moderate autocorrelation	Low autocorrelation
PHS – Quintile 1	Low autocorrelation	Moderate autocorrelation	Moderate autocorrelation	Low autocorrelation	Low autocorrelation	Low autocorrelation	Moderate autocorrelation
Education	High autocorrelation	High autocorrelation	High autocorrelation	High autocorrelation	Moderate autocorrelation	High autocorrelation	High autocorrelation

Table 9 Overview of autocorrelations per variable and per country.

4.2.4 Correlations between income, health and education indicators and PRR vote share

This section discusses the cross-correlations of all independent variables with PRR vote share per independent variable. The negative lags, which show the correlations of how the independent variables influence PRR vote share will be discussed in detail. Table 10 represents a summary of the cross-correlations for all negative lags across all countries and variables. The outcomes highlighted in grey are either not significant, slightly significant or only significant at lags past -8 – meaning that the correlation is significant with a delay of more than 8 years, which is unlikely to be true and is often caused by errors. The highlighted outcomes are therefore considered non-significant for this study.

Disposable income

For disposable income, no clear direct effect was found. For the Netherlands (at lags -1 to -4) and Poland (at lag -1) the CCF was positive. For Italy (at lags -3 to -10) and Denmark (at lags -1 to -7) it was negative. When considering the trends depicted in the time series analysis, this means that for the Netherlands, as disposable increased, vote share also increased within 1 to 4 years. For Poland, this effect was the same with 1 year delay. This is in line with the vote share trend in 2001 to 2020, which just as disposable income in Poland showed an increase. After 2022, PRR vote share decreased but for disposable income data was only available until 2021. Thus, this decrease in vote share could not be explained by disposable income. Considering the disposable income and PRR vote share trends of Italy, the significant negative correlations are in line with the trends as Italy has seen an decrease in disposable income and an increase in PRR vote share. Denmark also showed a negative correlation, meaning that the increase in disposable income would lead to a decrease in vote share. This is the case after 2022, but before 2022 Poland's PRR vote share increased. For Denmark, the values of the correlation are in line, as the country has seen a decrease in vote share since 2022. For Austria and Hungary the results are considered non-significant, as the results of the prior were slightly significant and Hungary only showed significant correlations at lags -9 to -12. These results shows no clear direction of the correlation between disposable income and PRR vote share was found and results are country-specific.

Gini-index

The analysis between Gini-index and PRR vote share showed no significant results for 5 out of 6 countries. For the Netherlands, Hungary and Poland no lags showed significant correlations. For Austria two lags were significant, but only slightly. For Denmark, only lags -9 to -12 were significant. This would mean that changes in Gini would lead to changes in PRR vote share 9 to 12 years later, what we consider to be unlikely. Italy was the only country that showed significant, positive correlations. Italy's Gini-index has showed a slight increase – meaning that income inequalities have become slightly larger – and so did the country's PRR vote share which is in line with the outcome of the correlation analysis. Yet, overall, this study did not find that the Gini-index is a suitable explaining factor for PRR vote share.

Life expectancy

The cross-correlations of life expectancy and PRR vote share has shown to be positive and significant for Italy, Austria, Hungary and Poland. All countries showed an increase in life expectancy, thus when looking at the cross-correlations, vote share also should have shown an increase for these four countries. For Italy, Austria and Hungary this is the case when looking at the trend in PRR vote share. For Poland, this was the case between 2001 and 2022. After 2022, the country's PRR vote share decreased. For the Netherlands and Denmark, cross-correlations between life expectancy and PRR vote share were non-significant. Again, this shows no consistency between the correlations and reflects country-specific results. As mentioned earlier, life expectancy showed high autocorrelations, thus results should be interpreted with caution.

Unmet health care needs

For unmet health care needs and PRR vote share, Italy, Denmark and Austria showed significant, negative correlations. Italy showed a decrease in unmet health care needs and an increase in vote share, which is in line with the negative correlations. Denmark showed a very slight increase in unmet health care needs, although almost negligible. The country's vote share showed a decrease. Austria showed a significant correlation at lag -3, yet the country's unmet health care needs remained constant between 2008 and 2022. Thus, this positive correlation could be caused by an error. For Poland, the correlations were positive and significant. The country showed a decrease in both unmet health care needs and PRR vote share, which is in line with the outcome of the correlation analysis. The Netherlands and Hungary both showed slightly significant correlations at two lags, which are considered non-significant. Overall, three countries showed correlations which were in line with the time trends, while three did not.

Perceived health status

Perceived health status (PHS) as good or very good was split up in two groups: quintile 1 (Q1) which represents the poorest part of the population and quintile 5 (Q5) which represents the richest part of the population. For Q5, PHS did not seem a strong predictor of PRR vote share. Italy and Denmark showed positive correlations at early lags. For Q5 in Italy, there was a positive cross-correlation at lags -1 and -3, meaning that as there PHS increased, vote share also increased. Denmark showed a positive correlation for this income group at lags -1 and -2. For this group in Denmark, PHS showed a decrease during the selected time period, thus vote share also decreased. For the Netherlands, Austria, Hungary and Poland results were insignificant for this income group.

For Q1, the Netherlands and Poland showed negative, significant correlations at respectively lags -1 to -4 and -1. The PHS of this group in the Netherlands decreased, thus the PRR vote share increased within 1 to 4 years. When looking at Poland's PHS trends and PRR vote share trends, PRR vote share increased during the period that PHS decreased. After 2020, PHS of this income group increased and after 2022, PRR vote share decreased. Italy and Denmark showed positive correlations. For Italy, the

PHS of the low income group increased and so did the PRR vote share. For Denmark, PHS of the low income group showed a decrease and so did the PRR vote share of that country. Thus, these correlations are in line with the trends. Austria only had one significant correlation at lag -11 and Hungary showed slightly significant results at lags -1 and -2. Both are considered non-significant.

Education

For education, the Netherlands, Italy, Austria, Hungary and Poland showed positive, significant cross-correlation with PRR vote share. For all countries, education showed an upward trend, and so did PRR vote share. Only Poland showed a decrease in vote share after 2022, but an increase between 2001 and 2022. For Denmark, correlations were negative and significant at lags -1 to -8. As education showed an increase, PRR vote share showed a decrease. However, education showed high autocorrelations, thus results should be interpreted with caution.

Positive lags

As previously mentioned, the results above are one the negative lags, which indicate an effect of the independent variables on PRR vote share. The positive lags indicate an effect of PRR vote share on income, health or education. Interestingly and in line with the literature study, the positive lags showed significant correlations for certain countries on all income, health and education variables. For disposable income, Austria, Hungary and Poland showed significant correlations. For Gini, Hungary, Denmark and Poland showed significant correlations. For life expectancy, all countries except Italy showed significant correlations. For unmet health care needs, the Netherlands, Austria, Hungary and Poland showed significant correlations. For PHS (both Q5 and Q1), Austria, Hungary, Denmark and Poland showed significant correlations. Lastly, for education, Hungary, Denmark and Poland showed significant correlations. This could indicate that PRR has an effect on the public's income, health and education.

	Disposable Income	Gini-index	Life Expectancy	Unmet health care needs	PHS high income	PHS low income	Education
The Netherlands	Positive CCF at lags -1 to -4	Not significant	Not significant	Negative CCF at lags -1 and -2 (SS)	Positive CCF at lags -3 and -4 (SS)	Negative CCF at -1 to -4	Positive CCF at lags -1 to -7
Italy	Negative at CCF at lags -3 to -10	Positive CCF at lags -3 to -7	Positive CCF at lags -3 to -14	Negative CCF at lags -1 to -4 and positive at lags -7 to -13	Positive CCF at lags -1 to -3	Positive CCF at lags -1 to -8	Positive CCF at lags -1 to -8
Austria	Negative CCF at lags -3 and -4 (SS)	Positive at lags -6 and -7 (SS)	Positive CCF at lags -1 to -10	Negative CCF a lag -3	Not significant	Negative CCF at lag -11	Positive CCF at lags -1 and -2, negative CCF at lags -7 to -14.
Hungary	Negative CCF at lags -9 to -12	Not significant	Positive CCF at all (negative) lags	Positive CCF a lag -9, positive at -10 (SS)	Not significant	Positive CCF at lags -1 and -2 (SS)	Positive CCF at lags -1 to -3.
Denmark	Negative CCF at lags -1 to -7	Negative CCF at lags -9 to -12	Not significant	Negative CCF at lag -1 and SS at lag -2	Positive CCF at lags -1 and -2, and -9 to -12	Positive CCF at lags -1 to -3	Negative CCF at lags -1 to -8
Poland	Positive CCF at lag -1, negative CCF at lags -8 to -13	Not significant	Positive CCF at lags -1 to -15	Positive CCF at lags -6 to -11	Not significant	Negative CCF at lag -1 and positive at lag -15	Positive CCF at lags -1 to -4

Table 10 Overview of cross-correlations and direction of correlation between independent variables and PRR vote share per country.

Table 11 provides an overview of the combined results of the time series analysis and the results of the cross-correlation. Combined, these results are used to report whether or not the hypotheses are accepted.

Hypotheses	The Netherlands	Italy	Austria	Hungary	Denmark	Poland
H1 ¹³ : Disposable income	Rejected. Disposable income increased, so did PRR vote share. Positive CCF.	Accepted. Disposable income decreased, PRR vote share increased. Negative CCF.	Rejected. Disposable income remained constant, PRR vote share increased. Non-significant CCF.	Rejected. Disposable income increased, so did PRR vote share. Non-significant CCF.	Accepted. Disposable income increased, PRR vote share decreased. Negative CCF.	Rejected. Disposable income increased, vote share decreased (only after 2022). Positive CCF.
H1: Gini-index	Rejected. Gini remained constant, PRR vote share increased. Non-significant CCF.	Accepted. Gini (slightly) increased, so did PRR vote share. Positive CCF.	Rejected. Gini (slightly) increased, so did vote share. But non-significant CCF.	Rejected. Gini fluctuated, PRR showed constant increase. Non-significant CCF.	Rejected. Gini (slightly) increased, PRR vote share decreased. Non-significant CCF.	Rejected. Gini decreased, so did PRR vote share (only after 2022). Non-significant CCF.
H2 ¹⁴ : Life expectancy	Rejected. Life expectancy increased, so did PRR vote share. CCF non-significant.	Rejected. Life expectancy increased, so did PRR vote share. Positive CCF.	Rejected. Life expectancy increased, so did PRR vote share. Positive CCF.	Rejected. Life expectancy increased, so did PRR vote share. Positive CCF	Rejected. Life expectancy increased, so did PRR vote share. Non-significant CCF.	Rejected. Life expectancy increased, PRR vote share decreased (only after 2022). Positive CCF.
H2: Unmet health care needs	Rejected. Unmet health care needs remained constant, PRR vote share increased. Non-significant CCF.	Rejected. Unmet health care needs decreased, PRR vote share increased. Negative CCF.	Rejected. Unmet health care needs remained constant, PRR vote share increased. Negative CCF.	Rejected. Unmet health care needs decreased, PRR vote share increased. Non-significant CCF.	Rejected. Unmet health care needs slightly increased, PRR vote share decreased. Negative CCF.	Accepted. Unmet health care needs decreased, so did PRR vote share (only after 2022). Positive CCF.

¹³ A change in income between 2000 and 2023 is negatively associated with an increased PRR vote share within a country.

¹⁴ A change in health between 2000 and 2023 is negatively associated with an increased PRR vote share within a country.

H3: PHS Q5	Rejected. PHS remained constant, PRR vote share increased. Non-significant CCF.	Rejected. PHS improved, PRR vote share increased. Positive CCF.	Rejected. PHS slightly improved, PRR vote share increased. Non-significant CCF.	Rejected. PHS improved, PRR vote share increased. Non-significant CCF.	Rejected. PHS decreased, so did PRR vote share. Positive CCF.	Rejected. PHS improved, PRR vote share decreased. Non-significant CCF.
H3: PHS Q1	Accepted. PHS decreased, PRR vote share increased. Negative CCF.	Rejected. PHS improved, PRR vote share increased. Positive CCF.	Rejected. PHS decreased between 2004 and 2012, increased after 2012. PRR vote share increased between 2000 and 2018, decreased after 2018. Non-significant CCF.	Rejected. PHS improved, PRR vote share increased. Non-significant CCF.	Rejected. PHS decreased, so did PRR vote share. Positive CCF.	Rejected. PSH decreased, so did PRR vote share. Negative CCF.
H3 ¹⁵ : Education	Rejected. Education improved, PRR vote share increased. Positive CCF.	Rejected. Education improved, PRR vote share increased. Positive CCF.	Rejected. Education improved, PRR vote share increased. Positive CCF.	Rejected. Education improved, PRR vote share increased. Positive CCF.	Accepted. Education improved, PRR vote share decreased. Negative CCF.	Rejected. Education improved, PRR vote share decreased. Positive CCF.

Table 11 Overview of hypotheses and whether the results accept or reject the hypothesis, based on trends in independent variable and PRR vote share and results cross-correlations.

¹⁵ A change in educational attainment level between 2000 and 2023 is negatively associated with an increased PRR vote share within a country.

5. Discussion

5.1 Answering the research questions

This study explored the relationship between PRR vote share on the one hand and income, health and education on the other, in order to understand the rise of PRR in many Western democracies over the past two decades. Given that PRR parties and politicians seem to contribute to polarisation of society (Silva, 2018), particularly through their anti-immigrant rhetoric, identifying the drivers behind this increasing vote share is crucial. This study provides a clear overview of driver of PRR voting that have already been studied. The addition of the time trend element and country-level data from the international comparative case study is a valuable contribution to the literature.

First, we explored what was already known about this relationship through a scoping review. The literature review revealed that while income and income inequalities are factors that could influence one's PRR voting behaviour, the impact of health and education on PRR voting remains underrepresented in the literature. While those indicators did not yield many results, the relationship between income inequality and PRR voting has been broadly studied. This relationship seems more complex and indirect than hypothesized, as many authors report that there are many factors that could play role in the relationship between income (inequality) and populist voting preferences. These factors include the following: **punishment of mainstream parties** in government from the poorer part of the population due to discontent (Proaño et al., 2022), **distrust in political elites** (Stoetzer et al., 2023) and **institutions** (Ivanov, 2023), **economic decline** (Proaño et al., 2022) and **relative deprivation** (Engler & Weisstaner, 2021) of low-income groups as a result of increasing income inequalities, **perceived reputation loss of middle income groups with high status** (Engler & Weisstaner, 2021), **social fragmentation** due to differing values between high and low income groups as a result of increasing inequalities (Snower & Bosworth, 2021), **differing policy preferences** between high and low income groups due to income inequalities (Gradstein, 2024), **geographical location** as EU-core countries make within-country income comparisons, while EU-peripheral countries make income comparisons with the EU-core countries (Schraff & Pontusson, 2024), **living area** in the U.S. in which living in a predominantly white living area increases the likelihood to vote for PRR than living in a racially mixed living area (Rodríguez-Pose et al., 2023), **cultural backlash** as a result of progressive cultural changes (Ausserladscheider, 2019) and **household unemployment risk** (Abou-Chadi & Kurer, 2021). All these factors reflect that income inequality and PRR voting might not be directly related, but may be influenced by many other indicators. The scoping review also included a part on the impact of PRR (policies) on the public's wellbeing in terms of income, health and education, as depicted in the theoretical model of Kavanagh & Menon (2024). The results of the scoping review are in line with this model, as all studies indicated a possible impact of PRR on either income, health or education through policy. PRR reflects their core ideologies, populism, nativism and

authoritarianism in their policies. For example, PRR leaders reduced household debt through their policies when in office, although these are often unsustainable (Pan, 2023). Furthermore, they reflect their authoritarian values through being against “pro-welfare” policies, in which only “deserving” are prioritised (Rathgeb & Busemeyer, 2022). For health, welfare chauvinism and anti-scientism were the most common practices of PRR, although characteristics of PRR in health differed per country (Falkenbach & Greer, 2021; Churi, 2023). In PRR education policy, PRR typically places a strong emphasis on educational programs conducted in the native language, restricts international student’s access to government funds and opposes against measures that support socioeconomically disadvantaged students to achieve merit, instead emphasising the importance of formal assessment and advocating for a system with highly stratified educational tracks.

The second aim of this study was to analyse how PRR vote share has been changing over the past two decades. Hungary and Poland showed a constant, upward trend until 2022. For Hungary, the vote share continued to increase, but Poland saw a decrease after 2022. For Austria, the Netherlands and Italy, PRR vote share fluctuated but saw a substantial increase after 2021. Denmark’s PRR vote share increased between 1998 and 2018, but substantially decreased between 2018 and 2024. Ireland’s PRR vote share remained constantly low.

Not only did we study the trends in vote share, but also those of several income, health and education indicators. For income, disposable income and Gini-index were studied. Overall, disposable income increased for most countries between 2007 and 2023. Especially Poland and Hungary showed a large increase. Italy was the only country that showed a decrease in disposable income and Austria’s disposable income remained constant. For the Gini-index, most countries remained stable between 2000 and 2021, except for Poland. Poland showed a decrease in Gini, meaning that inequalities decreased during that period. Differences in Gini are present, with Poland and Italy showing the highest Gini-indexes, while the Netherlands has the lowest Gini. Health indicators were life expectancy, Health Adjusted Life Expectancy (HALE), unmet health care needs and perceived health status a good or very good (PHS), with the last one being split by income group. Both life expectancy and HALE moved in an upward trend for all countries. Also here, differences between countries were present. Unmet health care needs showed a downward trend for Poland and Italy, for other countries it remained stable between 2008 and 2023. Since unmet health care needs have not increased for any of the countries during the selected time period, this variable does not seem a good predictor for the suggested increased distrust in or dissatisfaction with institutions and thereby increased PRR vote share, as suggested by Chambers-Richards et al., 2022. For most countries, inequalities in PHS have increased between 2005 and 2022, except for Italy and Austria. In Italy, inequalities in PHS decreased and in Austria they remained similar. In some cases, the low income group’s PHS deteriorated, while for other countries the PHS of this group improved. For education, the analysis showed an upward trend. This means that in all countries, the part of the population that obtained a degree in higher

education increased. Again, differences between countries were present, with Ireland having the largest share of the population attaining higher education, while Italy has the smallest. The fact that life expectancy, HALE and education showed constant, upward trends might indicate that they are not suitable predictors of PRR vote share. The trends of these indicators did not show any fluctuations and constantly increased regardless of PRR vote share. This could suggest that, on the country level, these indicators are not related with PRR vote share.

Lastly, all variables mentioned in the previous section have been cross-correlated with PRR vote share per country to analyse how these two variables are related. The results show no consistent relationship between PRR vote share and income, health and education. Although significant cross-correlations were present, they were not consistent across countries. Moreover, some cross-correlations yielded inverse significant results, thus contradicting the initial hypotheses. For example, disposable income showed positive and significant cross-correlations with PRR vote share for the Netherlands and Poland, negative and significant cross-correlations in Italy and Denmark, and was insignificant for Austria and Hungary. The cross-correlations between Gini-index and PRR vote share yielded non-significant results for 5 out of 6 countries, suggesting that Gini-inequality may not be a suitable predictor of PRR vote share at the country level. This finding aligns with the results of Bergh & Kärnä (2022), who also did not find evidence for the impact of Gini-inequality on PRR vote share. Based on the time series of perceived health status (figure 11), health inequalities seemed to have increased in most countries. However, the results of the cross-correlations yielded no clear difference between two income groups. Thus, our study does not support the idea that increasing health inequalities are a driver for PRR support at the country level. Lastly, Ireland was included as a control group to examine whether the trends in income, health and education were in line with the country's constant low vote share according to our hypotheses and results. The constant trend of low vote share cannot be explained by changes in other trends.

5.2 Critical reflections and possible explanations: what this study adds

This study contributes to the literature by studying the effects of income, health and education on PRR vote share using a distinct methodological approach. First, the scoping review provided an overview of many already studied factors that seem to be drive PRR voting behaviour. Additionally, rather than predominantly focusing on income (inequalities) like many prior studies, our study incorporates health (inequalities) and education as additional socio-economic factors. Furthermore, it used a time series analysis with cross-correlations – an approach that, to our knowledge, has not been previously applied to this topic. By adopting a country-level analysis, this study moves beyond the limitations of individual-level studies, which could be influenced by factors such as perceived experiences, socially desirable answers and memory bias. Instead, our study investigated whether the already established

relationship between socio-economic factors and PRR voting at the individual level also holds at the country level.

Our time series analyses and cross-correlations partly challenge the common notion that income inequalities influence PRR voting behaviour. This relationship is not unequivocal at the country level, as variables showed inconsistencies between countries and some variables even showed an inverse relationship with PRR vote share. This raises questions about the general notion that income inequalities predict PRR vote share.

When placing our findings between countries within a broader context of the existing literature, it becomes evident why the analyses did not yield direct nor consistent results regarding the relationships PRR vote share and income, health and education. As mentioned earlier, the scoping review reveals that the impact of income inequality on PRR voting behaviour seems generally accepted, although it is influenced by many factors. This could explain why our empirical study did not find consistent results across countries, as many other factors could be playing a role in the relationship between our selected socio-economic factors and PRR vote share.

Interestingly, the cross-correlations also resulted in interesting findings on the inverse relationship, in which the effect of PRR vote share on income health and education showed a large amount of significant cross-correlations at the country level. This might suggest that PRR may be influencing the public's income, health and education. No in-dept analysis of the direction of these correlations was done. However, the second part of the scoping review showed that PRR could be influencing the public's income, health and education through policy, and these correlations might support this idea.

5.3 Theoretical reflections

The hypotheses, which expected the selected income, health and education indicators to explain the increase in PRR vote share, are partly rejected. They cannot be accepted as there are no consistent correlations between PRR vote share and any of the independent variables on all countries.

Nevertheless, the mixed results from the international comparative case study seem to confirm the results of the scoping review indicating a more nuanced relationship between the independent variables and PRR vote share, which could be country-specific.

Our findings allow for a revision on the theoretical model as depicted in Kavanagh & Menon (2024). Our study does not deny that social influences, economic conditions and health may contribute to voting behaviour at the individual level, but the relationship does not seem as straightforward as depicted in the model. According to our results, a few additions are suggested. First, an element of country-varying factors should be included which explain our mixed results between countries. The cultural aspect, as explained in the cultural backlash theory, seems to be missing in the model. This

theory explains that conservatives fear a loss of reputation as a result of the progressive changes of the past decades, which drives them to vote for PRR. (Dis)trust in and discontent with elites, government or mainstream parties were important elements which came forward in multiple studies from the scoping review, but seems to be missing in Kavanagh & Menon's model as well. Lastly, geographical living area plays a role in shaping voting behaviour, specifically whether one lives in a predominantly white living area or a racially mixed area, and whether one lives in a richer or poorer region. This element seems to be missing in the current model as well.

As identified in the scoping review, the relationship between health and PRR voting remains underrepresented in the literature. The relationship between health and voting in general is well established and not subject to debate (Brown et al., 2020; Shore et al., 2020; Kavanagh & Menon, 2024). While these studies primarily examine how health influences personal efficacy and voter participation, the impact of health on the formation of political preferences—particularly support for PRR parties—remains largely unexplored. Only Kavanagh & Menon found support for the notion that worse health predicted PRR voting, albeit at the individual level.

Our evidence indicates that alternative explanations for the rise in PRR vote share at the country level are likely. Gidron & Hall (2020) explain that income inequalities create social hierarchies where people who are subjectively at the bottom of the social hierarchy feel marginalised, driving them to vote for radical political parties. The scoping review explained that this is not as straightforward, and that middle incomes might also fear reputation loss (Engler & Weisstanner, 2021). Additionally, as mentioned in the introduction, income, health and education are interrelated. Studying their separate impact may not be sufficient in explaining the rise of PRR parties. Based on these ideas, we hypothesize that the perception of inequalities might be more important for PRR vote share than actual inequalities and that a perceived decline – regardless of the socio-economic indicator or the social group one belongs to – may be the reason people turn to PRR as they perceive a feeling of falling behind. This idea is in line with Gomez et al. (2024) who draw a similar conclusion with regard to objective and subjective job insecurity in their study. This hypothesis is also based on the fact that our international comparative case study does not indicate a consistent increase in income (Gini) and health (perceived health status) inequalities across countries. We also did not find that (increased) inequalities correlated with PRR vote share, as Gini correlations with PRR vote share were non-significant in nearly all countries. Moreover, we observed no notable differences in the cross-correlations of perceived health status between the low- and high-income groups. These results indicate that actual inequalities do not seem to be increasing in all countries and for some are even decreasing. Therefore they may not be the best explanatory factors for the rise of PRR parties in Europe.

Additionally, Muis & Immerzeel (2017) show that anti-immigrant and populist rhetoric of PRR shape people's perceptions and political behaviour, which might be a factor explaining the rise of PRR parties. Alrababah et al. (2024) provide evidence for this by studying the impact of PRR anti-immigrant rhetoric on Swiss municipalities near the border, which experienced higher exposure to immigration compared to those further inland. Their findings indicate that political elites target their anti-immigrant rhetoric at these municipalities near the border and that the rhetoric had the strongest influence on citizens with the highest exposure to immigration, making them more likely to be persuaded. Besides PRR rhetoric, other factors which could drive people to vote for PRR include (dis)trust in government, political elites and public services (Gradstein, 2024; Stoetzer et al., 2023; Ivanov, 2023). Other explaining factors could be cultural backlash (Ausserladscheider, 2019) and life dissatisfaction (Silva, 2024). Lastly, our results suggest that effects of income, health and education on PRR vote share differ per country and may be based on other country-specific factors, such as historical events.

5.4 Methodological reflections

Studies examining the relationship between socio-economic indicators and PRR voting often rely on survey data and thus individual level data (either on both dependent and independent variables, or solely on the outcome variable), as illustrated in table 5. These studies almost consistently find evidence for the notion that socio-economic factors, particularly a decline in either of these factors, drives people to vote for PPR. In contrast, our study, primarily based on country-level data, cannot confirm nor refute the outcomes of the other studies, as these studies methodologically differ from each other: conclusions based on individual data cannot be compared to data based on country level. Studies on the individual level may find phenomena that are not present at country-level, as country-level studies use aggregates of data and treat the country as a homogenous group. This methodological divergence likely explains why the findings of the international comparative case study do not align with most individual-level studies discussed in the scoping review, but do align with the outcomes from Bergh & Kärnä (2022), who also relied on country-level data.

While this study provides valuable insights, it also has certain limitations. To begin, the search strategy of the scoping review has its limitations, as it might have been too broad. It included the terms 'health', 'economic' and 'social', which not directly aligns with the three indicators under study: income, health and education. While this search strategy still yielded a substantial number of studies on income, it may explain why no papers on the impact of education on PRR voting showed up. Next to this, inter-rater reliability may be violated since the study selection was done by one person. Selection criteria could be interpreted differently by others, possibly leading to a different study selection. Lastly, the results of the content analysis of the scoping review rely on the interpretation of

one person and were not systematically analysed with an qualitative data analysis software program, such as Atlas.ti. This harms the transparency and reliability of the scoping review.

When looking at the international comparative case study, we utilised data obtained from multiple institutions and operated under the assumption that these values were measured consistently across countries. However, usually, time series analyses require at least 50 time points for robust results (Nelson & Lewis, 1998). However, in this study, most time series included approximately 20 time points. This may be insufficient and could have influenced the outcomes of the data analysis.

Furthermore, this study utilised data obtained from multiple institutions and operated under the assumption that these values were measured consistently across all countries. Besides this, the variable HALE did not have enough time points to make a time series, which is why autocorrelations and cross-correlations for this variable could not be calculated. However, HALE showed a similar trend to life expectancy, as differences between countries were similar for both variables and both variables showed an constant, upward trend. This constant, upward trend shows that life expectancy, which was also the case for education, increases over time regardless of what PRR vote share has been doing. This suggests that life expectancy might not be the most suitable health indicator to study its relationship to PRR vote share. Thus, interpretation of the cross-correlations between these two variables should be done with caution. Lastly, the variables life expectancy and education show high autocorrelations, and disposable income and vote share show moderate to high autocorrelations for most countries. Cross-correlations between two autocorrelated times series can appear to be significant even when a true relationship is absent (Dean & Dunsmuir, 2015). Since all cross-correlations are between an independent variable and vote share, results could have been influenced by these autocorrelations. Dean & Dunsmuir (2015) emphasise that through differencing and pre-whitening, corrections for the autocorrelations can be made. As reported in the results, this thesis used the 95% significance interval. Given the large amount of significance intervals, changes for inflated type 1 errors are larger, meaning that changes are higher than we found a significant relationship which in reality is not present. Some cross-correlations between two time series showed slightly significant values. If a 99% significance interval was chosen, these correlations would not have been significant. However, variables with only slightly significant cross-correlations were considered not significant to reduce chances of wrongfully finding significant results.

5.5 Recommendations for research and democratic practice

This study represents an important step in the exploration of possible explanations for the increase of PRR vote share. The often assumed relationship in the literature with income, health and education is not consistently confirmed in this study, and therefore calls for further investigation in future research. Our findings suggest that there may be alternative explanations at country level for the increase of

PRR vote share, such as PRR rhetoric and cultural backlash. Other cultural factors, whose relationship with PRR voting remains underexplored, could possibly offer valuable insights into explaining factors for the rise of PRR.

Additionally, future research could consider the difference between perceived inequalities and actual inequalities, and how these relate to PRR voting. Future studies incorporating these potential explanatory factors may provide new insights into drivers behind PRR vote share. A general finding from the theory chapter and literature study is that individuals who *experience* a decline – whether this decline is in health, income, or social position - or feel like they fall behind compared to others, are more likely to turn to PRR. It may not be the impact of one certain factor, such as income, health, and education, but a general feeling of falling behind that drive individuals to vote for PRR. This could also have to do with the interrelatedness of these factors. To our knowledge, there is a notable lack of qualitative studies exploring this phenomenon. Such studies could provide an in-depth reasoning for why some individuals turn to PRR parties, while others do not.

Future studies that integrate big data-based measures of income, health and education at country-level would make a valuable contribution to the literature on PRR and health, since such approaches have not been widely employed. Since income, health and education interact with one another, future studies could include an interaction model in their analysis to understand if and how these factors have a combined effect on PRR voting, as this was not possible with the time series analysis of this study. This would gain insights in possibly amplifier effects of these variables or possible conditional relationships between the variables.

Another important recommendation for future research is to incorporate similar measures at the municipal-level rather than solely at the country level. This approach is valuable for several reasons. First, it would provide a greater numbers of data points, enhancing the validity of the analysis. Second, it would offer insights into within-country processes such as cultural changes and possible clashes, complementing the existing literature, which predominantly focuses on individual-level factors. Examining PRR voting at the municipal level could help determine whether similar PRR trends observed at the national level also manifest locally and whether local dynamics could counterweight these broader trends. Findings from Snower & Bosworth (2021), Rodríguez-Pose et al. (2023), Schraff & Pontusson (2024) and Vlandas & Halikiopoulou (2021) seem to suggest that certain processes that may drive PRR voting – such as social fragmentation (as individuals are likely to compare themselves to those in the immediate environment), regional economic inequalities, and social welfare policies – can happen at a local level. This offers opportunities for local governments to (re-)gain trust in government by, improving local public services, strengthening their direct responsiveness to citizens demands and a participatory design of public policies.

6. Conclusion

While the scoping review indicated evidence for the idea that income (inequality) is a driver for PRR voting behaviour, our international comparative case study did not find support for the notion that income, health and education at the country level are key drivers for the increased PRR vote share in the selected European countries. Gini-index showed insignificant results for 5 out of 6 countries, suggesting that Gini is not a suitable predictor for PRR vote share. For all other indicators, results were mixed and country-specific. This study contributes to the existing literature by nuancing the dominant assumption that income is a primary driver of PRR and raises questions about alternative explanations for the rise of PRR. Although the results from our country-level study significantly differ from most studies working with individual level survey data that we reviewed in the literature study, they do not contradict the existing literature. Rather, they contribute to this body of research by employing a different methodology. While at the individual level, a (perceived) decline in people's income and health increases the likelihood of voting for PRR, PRR vote share cannot be explained by a country's trend in income, health or education (inequalities). Moreover, these results vary depending on the specific indicator and country. Possible alternative explanations were indicated, such as cultural backlash and PRR rhetoric, which require follow up studies into their relationship with PRR vote share at the country level. Finally, evidence from the scoping review and careful interpretations of our cross-correlation suggest that PRR (vote share) may influence the public income, health and education. The literature study indicates that this primarily occurs mostly through exclusionary policies targeting specific social groups.

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6. Appendix

Appendix 1 – Durban-Watson Test

For the Durban-Watson test, a linear model of one predicting variable and the outcome variable is made, as if the assumption of independence was not violated. Hereafter, the Durban-Watson test was performed. For this test, the alternative hypothesis says that the measurements are autocorrelated. The null hypothesis says that the measurements are not autocorrelated. An alpha of 0,05 is chosen, which means that if the p-value of the Durban-Watson test is smaller than 0,05, the measurements are autocorrelated. A Durban-Watson value around 2 could suggest that there is no autocorrelation, whereas values below 1 and above 3 mean that the measure are most likely autocorrelated. The results of the tests can be found in table 4.

Variable	Durban-Watson value	P-value
Disposable Income	0.36803	< 2.2e-16
Gini-index	0.22759	< 2.2e-16
Health Inequalities – PHS split by richest and poorest quintile	AUT: 0.24037 DNK: 0.33534 HUN: 0.41562 IRL: 2.4762 ITA: 1.6808 NLD: 0.41528 POL: 0.1158	AU: 1.42e-11 DNK: 6.426e-12 HUN: 6.874e-10 IRL: 0.9943 ITA: 0.1005 NLD: 4.12e-09 POL: < 2.2e-16
Life Expectancy	0.17744	< 2.2e-16
HALE	1.1745	0.0001968
Unmet Healthcare Needs	0.95019	< 2.2e-16
Tertiary Education	0.26496	< 2.2e-16

Table 12 Results Durban-Watson Test.

Appendix 2 – Analysis plan

Step 1- Time series analysis vote share

This first step shows the trends in vote share per party and thereby answers RQ2.

- Give line graph from relevant time period (2000-2023) on vote share per PRR country per party
 - NL: PVV
 - Italy: LEGA and Fratelli d'Italia
 - Austria: FPÖ
 - Hungary: Fidesz
 - Denmark: DF
 - Poland: PiS
 - Ireland: no PRR vote share included in dataset

Step 2 – Time series analysis of independent variables

This step shows the time series (time trend or line graph) of the independent variables per country and thereby answers RQ3

- Time series of disposable income
- Time series Gini-index
- Time series life expectancy
- Time series HALE
- Time series unmet health care needs
- Time series perceived health status as good or very good – split by income group
- Time series education

Step 3 – check for assumptions

- Check for assumption of independence.
 - This is done with the Durban-Watson test (Field et al., 2012). Values less than 1 or greater than 3 means assumption is most likely violated. the closer to 2, the better and means that the assumption has been met.

Step 4 – autocorrelations

- For each country, a separate dataset is created.
- From these datasets, time series are made for each variable (per country)
- With these time series, autocorrelations can be made (acf function in R)

Step 5 – cross-correlations

This step tests the relationship between social status and PRR vote share and thereby answers RQ4.

This will be done with cross-correlations

1. Analyse relationship between disposable income and PRR vote share through cross-correlations, per country.
2. Analyse relationship between life expectancy and PRR vote share through cross-correlations, per country.
3. Analyse relationship between DALE and PRR vote share through cross-correlations, per country.
4. Analyse relationship between unmet health care needs and PRR vote share through cross-correlations, per country.
5. Analyse relationship between perceived health status and PRR vote share through cross-correlations, per country.
6. Analyse relationship between attainment higher education and PRR vote share through cross-correlations, per country.

Appendix 3 – Included Articles Scoping Review

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Appendix 5 – Vote Share per Political Party

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
PVV (NLD)	-	-	-	-	-	-	5.9	5.9	5.9	5.9	15.5	15.5	10.1	10.1	10.1	10.1	10.1	13.1	13.1	13.1	13.1	10.8	10.8	23.5	23.5
LEGA (ITA)	10.1	3.9	3.9	3.9	3.9	3.9	4.6	4.6	8.3	8.3	8.3	8.3	8.3	4.1	4.1	4.1	4.1	4.1	17.4	17.4	17.4	17.4	8.8	8.8	8.8
FDL (ITA)	-	-	-	-	-	-	-	-	-	-	-	-	-	2.0	2.0	2.0	2.0	2.0	4.4	4.4	4.4	4.4	26.0	26.0	26.0
FPÖ (AUT)	26.9	26.9	10.0	10.0	10.0	10.0	11.0	11.0	17.5	17.5	-	-	-	20.5	20.5	20.5	-	26.0	26.0	16.2	16.2	16.2	16.2	16.2	28.8
Fidesz (HUN)	29.4	29.4	41.1	41.1	41.1	41.1	42.0	42.0	42.0	42.0	52.7	52.7	52.7	52.7	44.9	44.9	44.9	44.9	49.3	49.3	49.3	49.3	54.1	54.1	54.1
DF (DNK)	7.4	12.0	12.0	12.0	12.0	13.3	13.3	13.9	13.9	13.9	13.9	12.3	12.3	12.3	12.3	21.1	21.1	21.1	21.1	8.7	8.7	8.7	2.6	2.6	2.6
PiS (POL)	-	9.5	9.5	9.5	9.5	27.0	27.0	32.1	32.1	32.1	-	29.9	29.9	29.9	29.9	37.6	37.6	37.6	37.6	43.6	43.6	43.6	43.6	35.4	35.4
Ireland	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5

Table 13 *Vote share (%) of PRR parties of selected countries.*

Appendix 6 – Figures Perceived Health Status Inequalities per Country

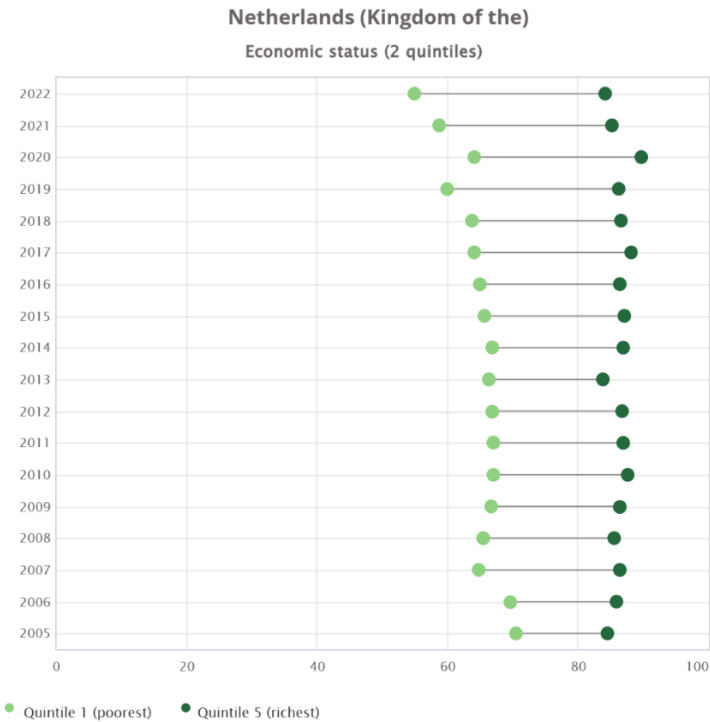


Figure 12 Perceived health status as good or very good, split by economic status – the Netherlands.

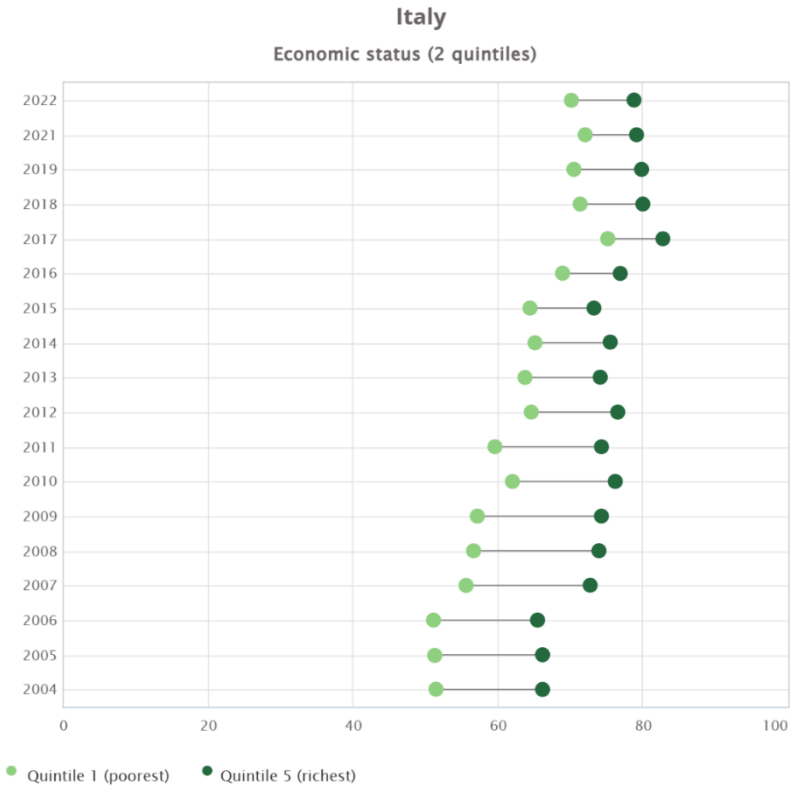


Figure 13 Perceived health status as good or very good, split by economic status – Italy.

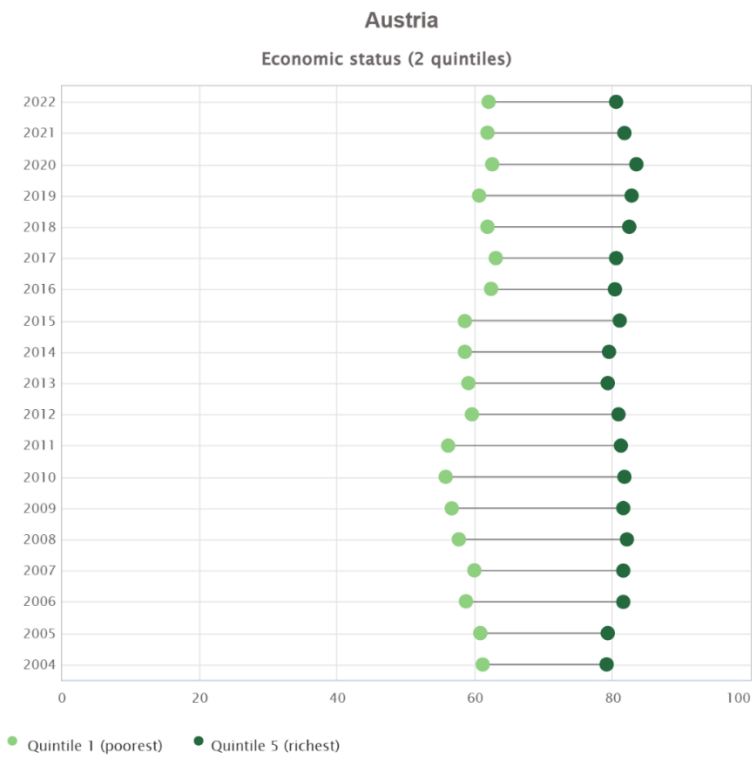


Figure 14 *Perceived health status as good or very good, split by economic status – Austria.*

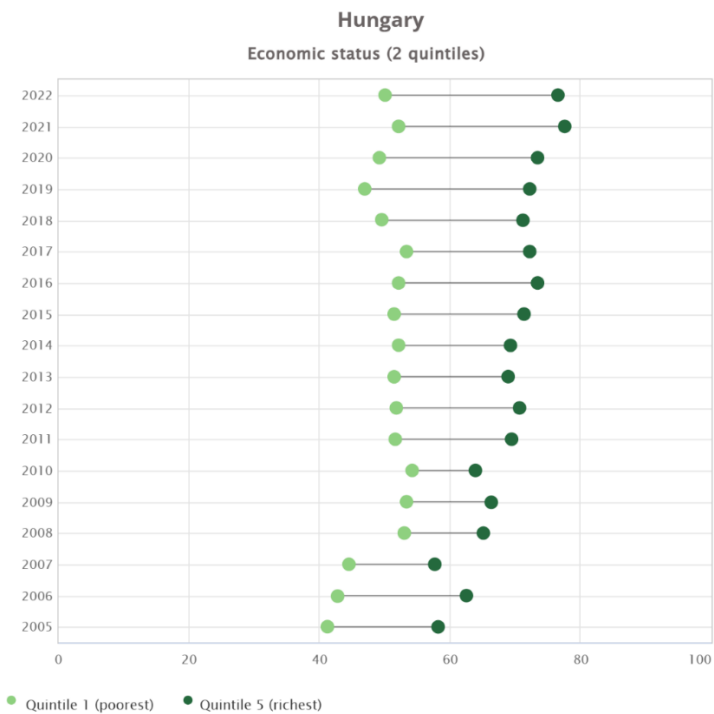


Figure 15 *Perceived health status as good or very good, split by economic status – Hungary.*

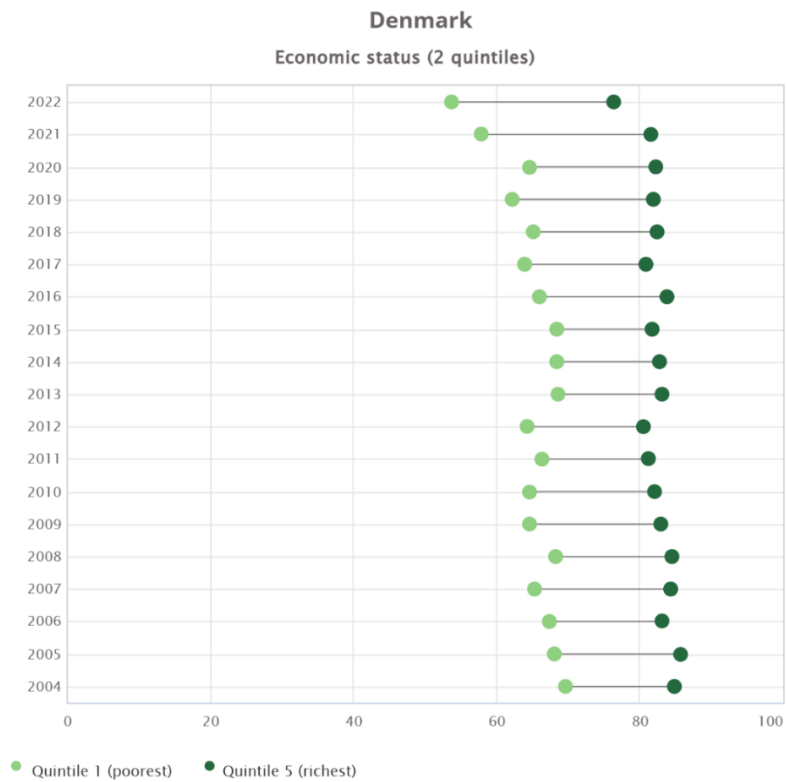


Figure 16 Perceived health status as good or very good, split by economic status – Denmark.

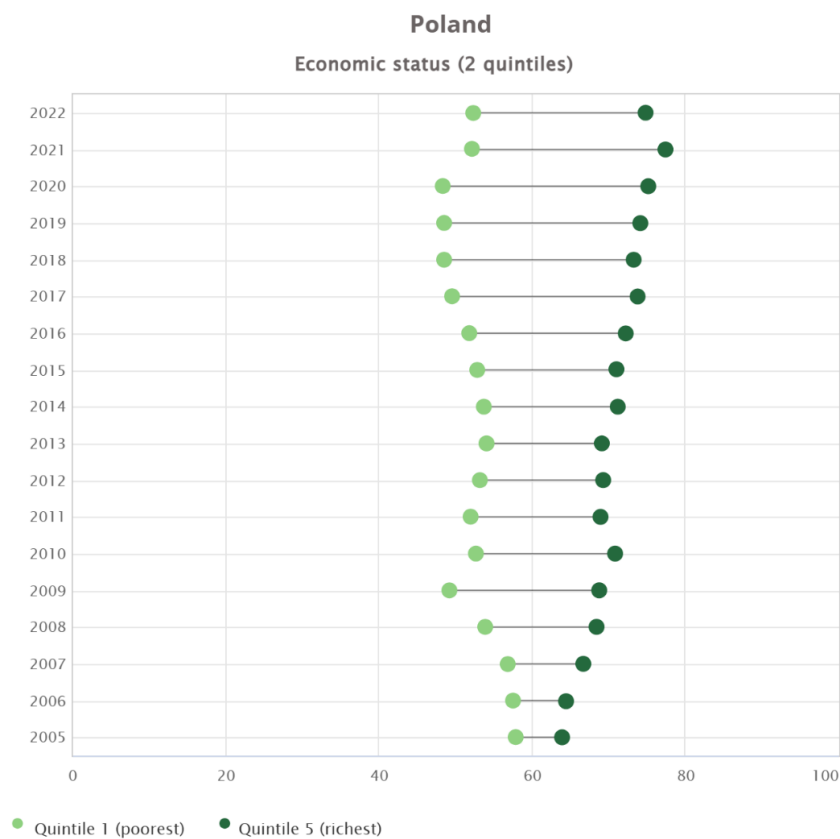


Figure 17 Perceived health status as good or very good, split by economic status – Poland.

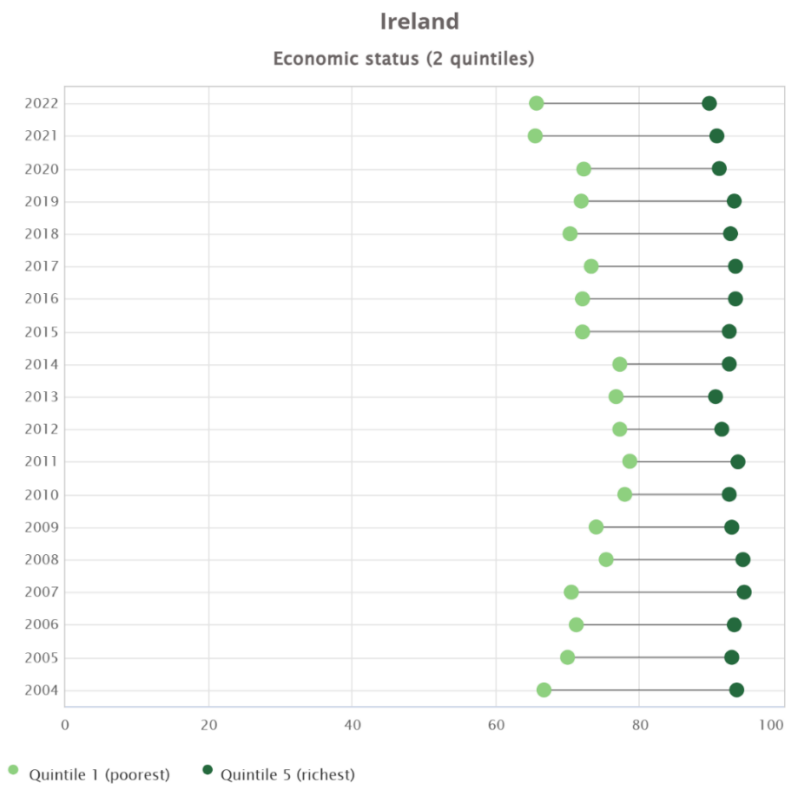


Figure 18 *Perceived health status as good or very good, split by economic status – Ireland.*

Appendix 7 – Time series and autocorrelation per country

The Netherlands

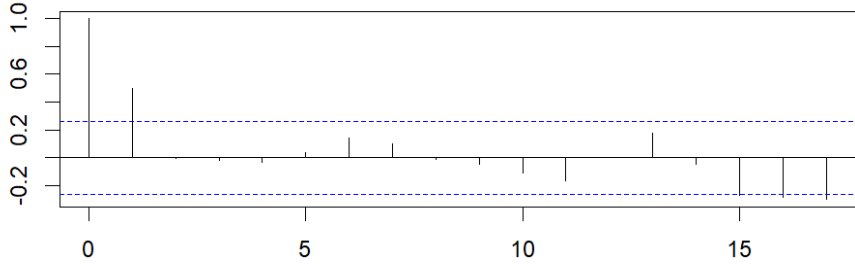


Figure 19 *Autocorrelation of vote share PVV (the Netherlands).*

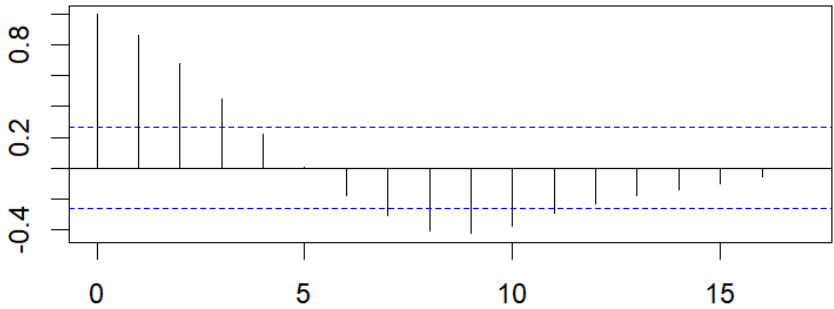


Figure 20 *Autocorrelation disposable income of the Netherlands.*

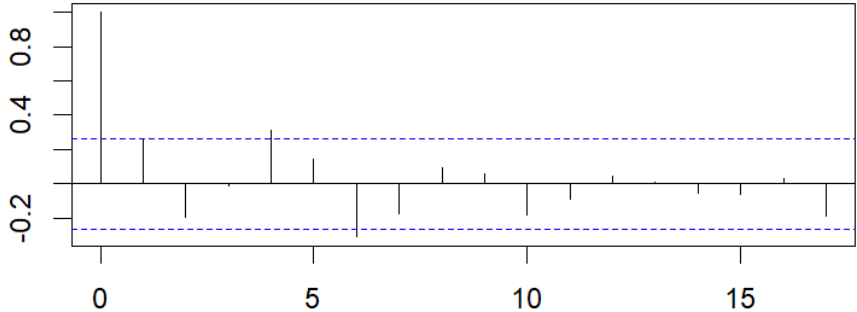


Figure 21 *Autocorrelation Gini-index of the Netherlands*

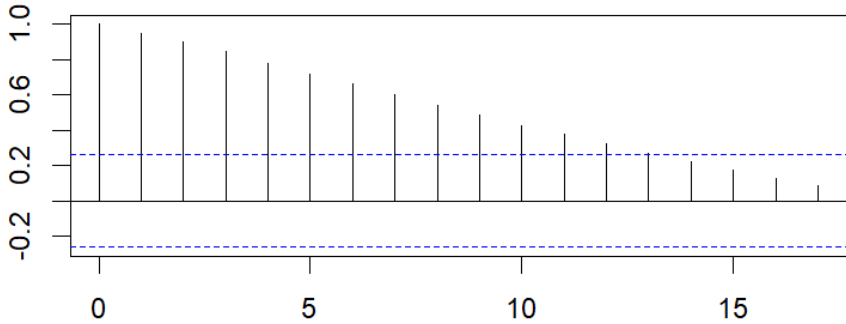


Figure 22 *Autocorrelation of life expectancy of the Netherlands.*

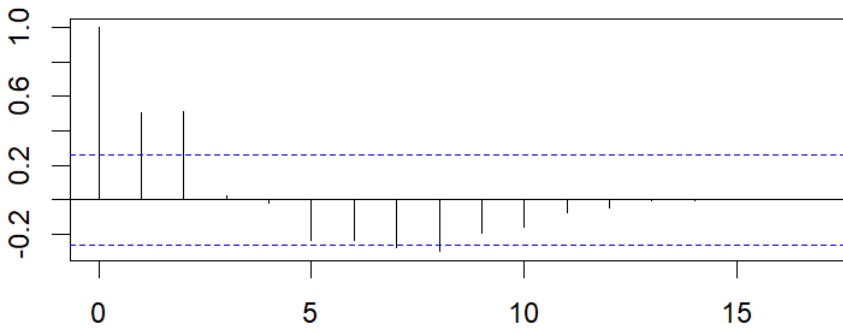


Figure 23 *Autocorrelation unmet health care needs of the Netherlands.*

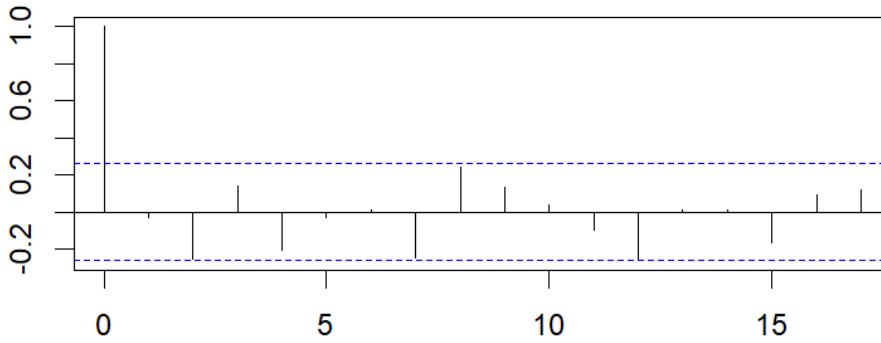


Figure 24 *Autocorrelation PHS highest quintile of the Netherlands.*

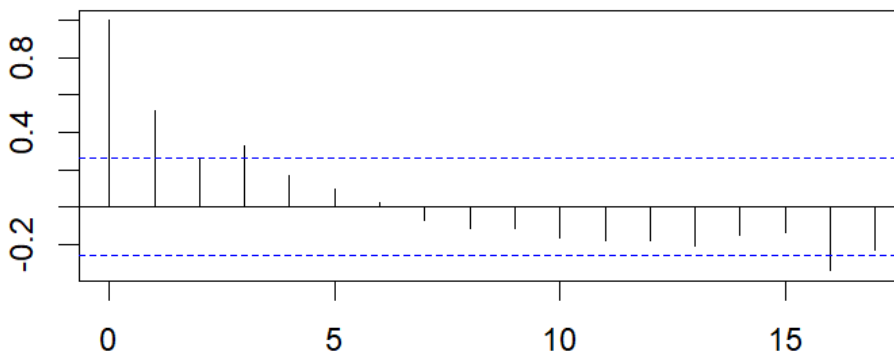


Figure 25 *Autocorrelation PHS lowest quintile of the Netherlands.*

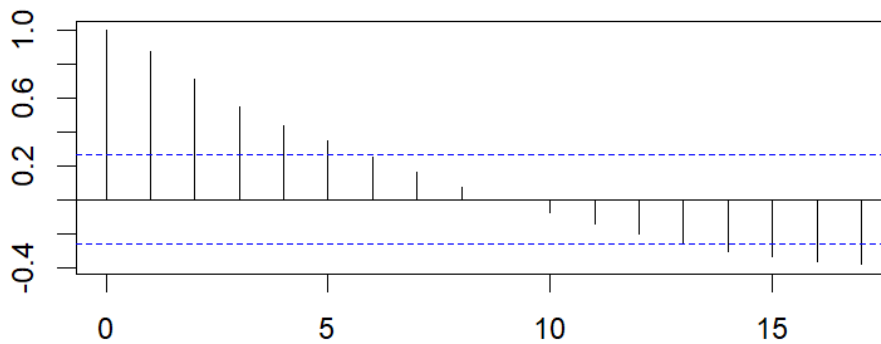


Figure 26 *Autocorrelation education of the Netherlands.*

Italy

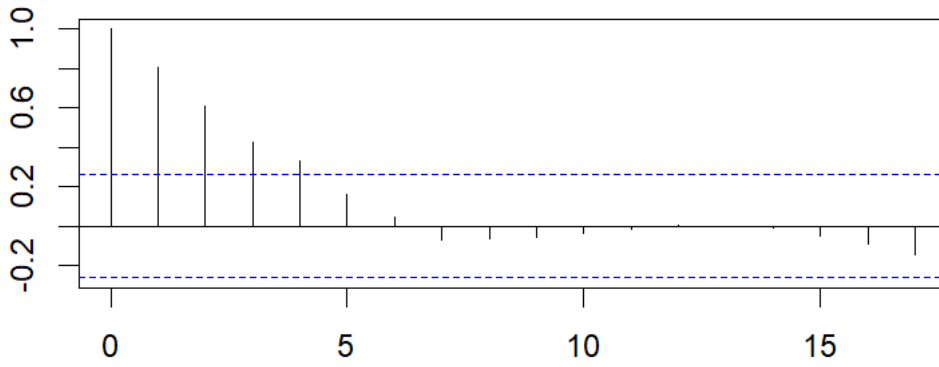


Figure 27 *Autocorrelation vote share of Italy (total vote share of FDL and LEGA).*

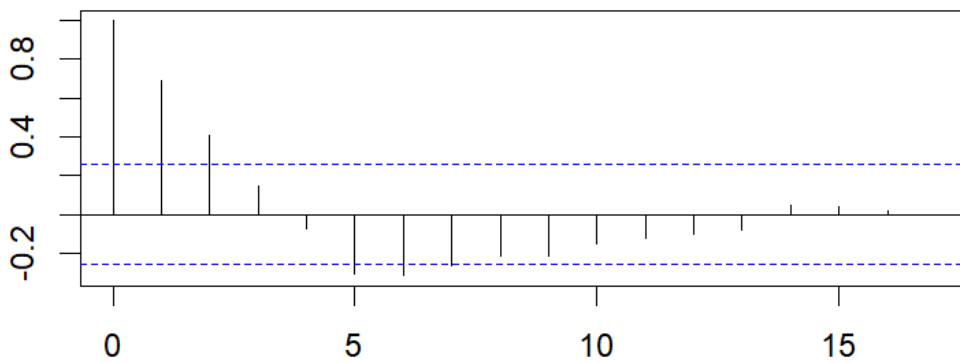


Figure 28 *Autocorrelation disposable income of Italy.*

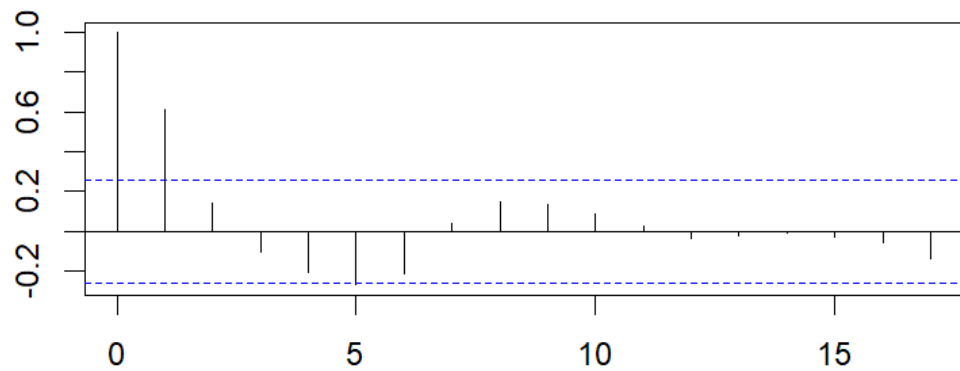


Figure 29 *Autocorrelation Gini-index of Italy.*

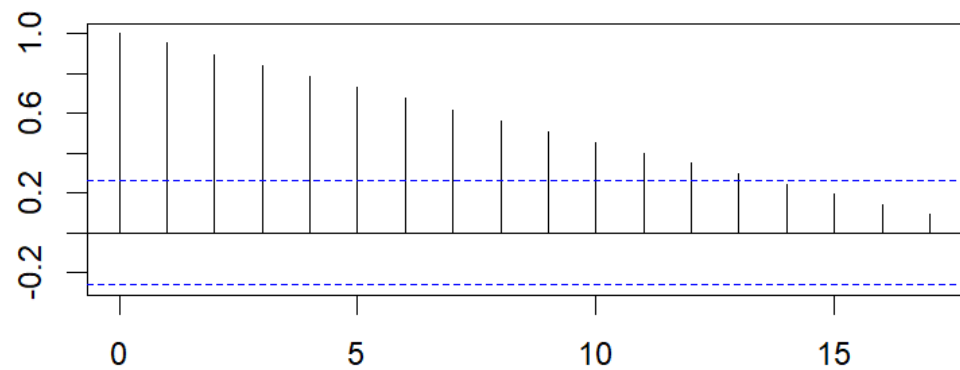


Figure 30 Autocorrelation life expectancy Italy.

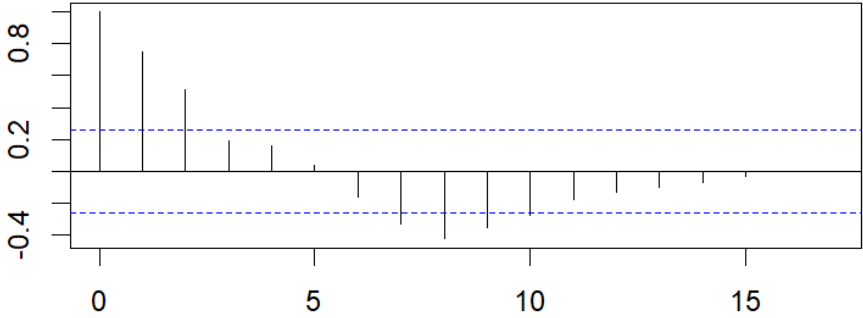


Figure 31 Autocorrelation unmet health care needs Italy.

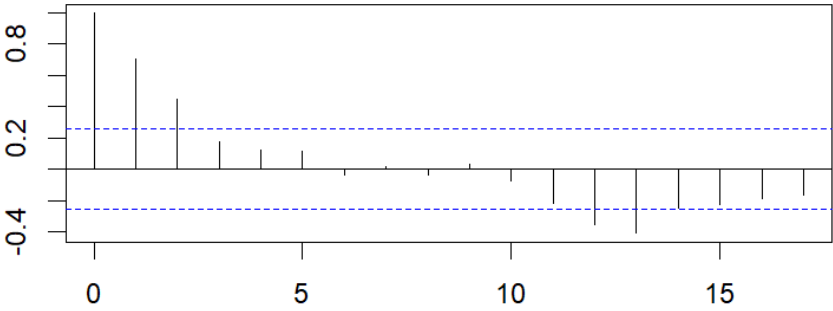


Figure 32 Autocorrelation PHS highest quintile ITA.

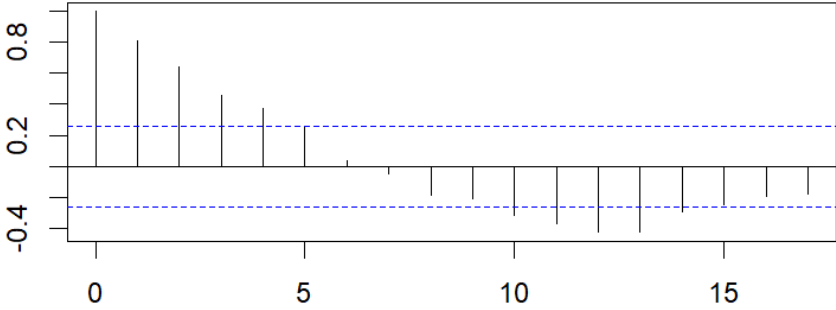


Figure 33 Autocorrelation PHS lowest quintile Italy.

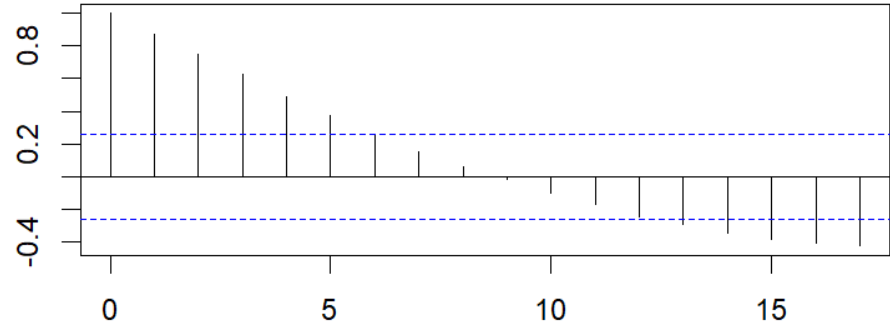


Figure 34 Autocorrelation education Italy

Austria

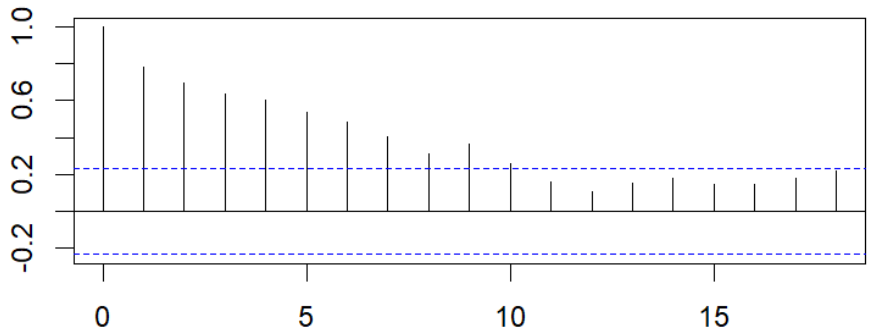


Figure 35 *Autocorrelation vote share of Austria.*

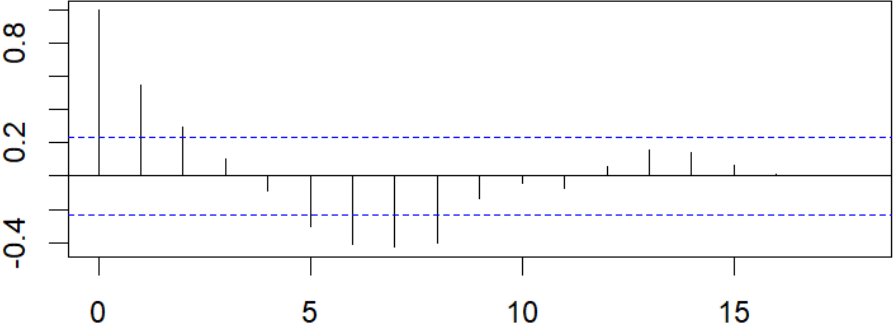


Figure 36 *Autocorrelation disposable income Austria*

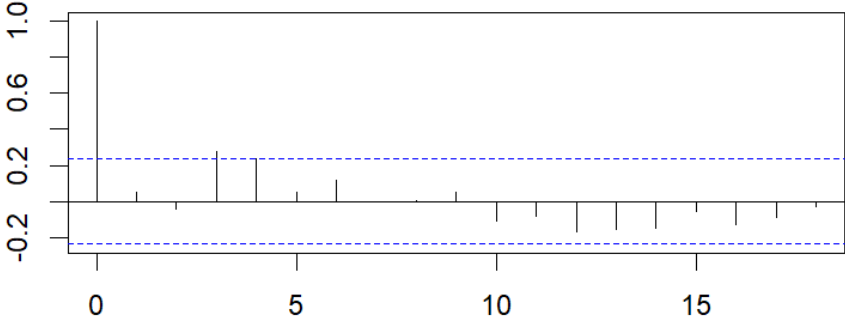


Figure 37 *Autocorrelation Gini-index of Austria.*

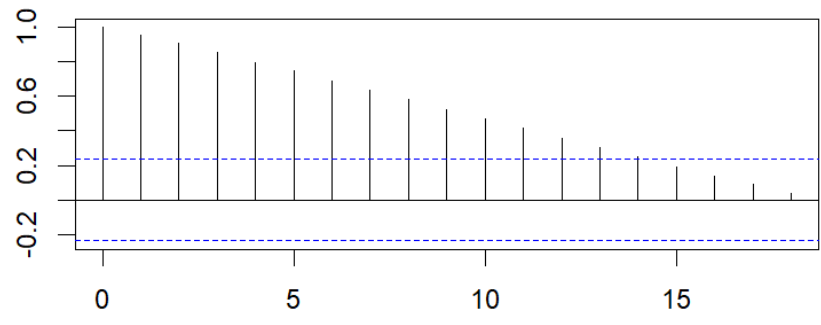


Figure 38 *Autocorrelation life expectancy of Austria.*

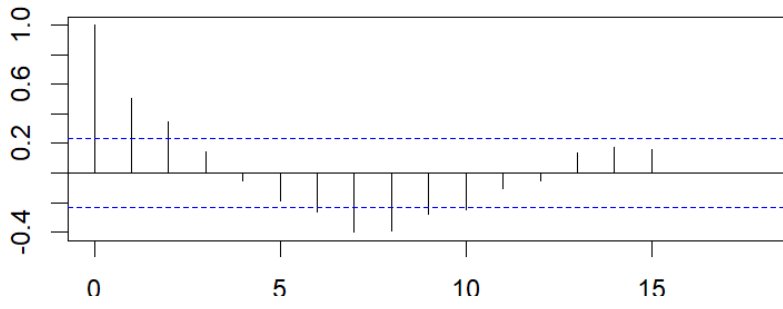


Figure 39 *Autocorrelation unmet healthcare needs Austria*

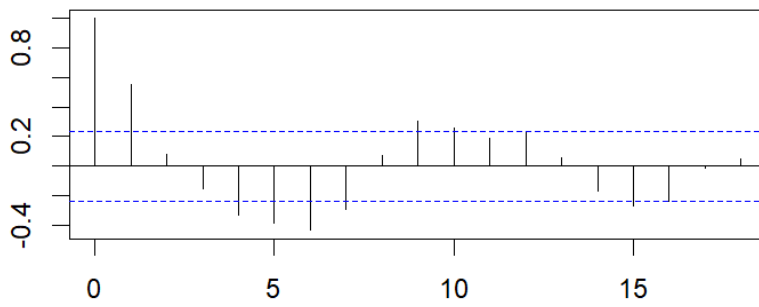


Figure 40 *Autocorrelation PHS highest quintile Austria.*

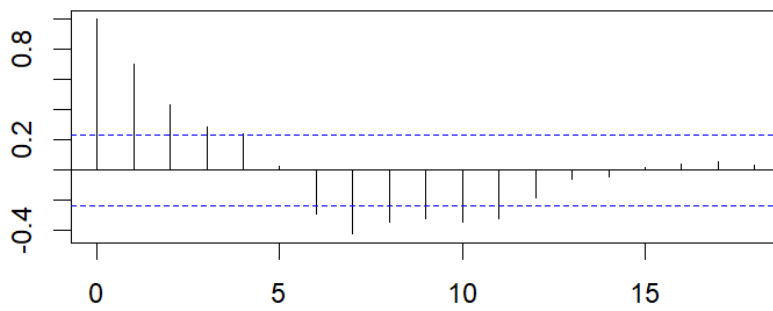


Figure 41 *Autocorrelation PHS lowest quintile Austria.*

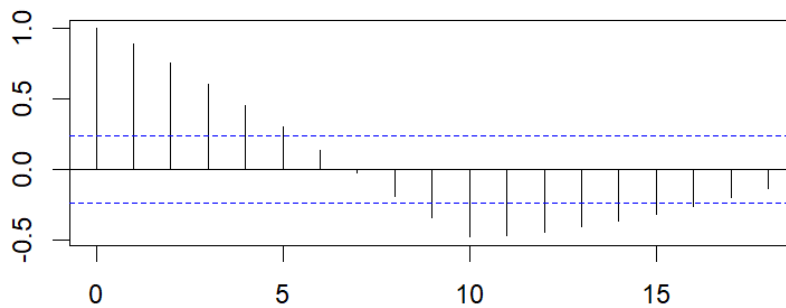


Figure 42 *Autocorrelation education Austria.*

Hungary

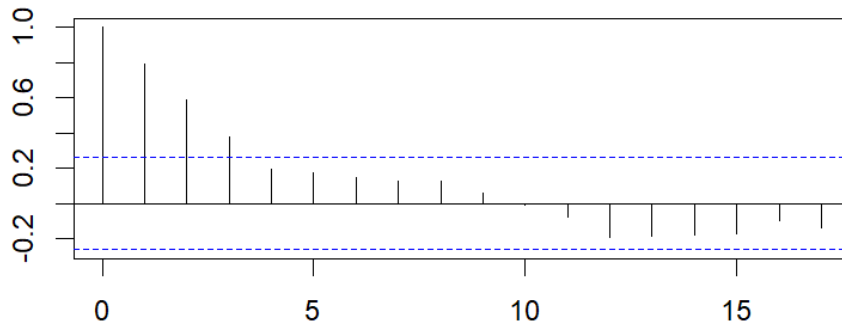


Figure 43 *Autocorrelation vote share of Hungary.*

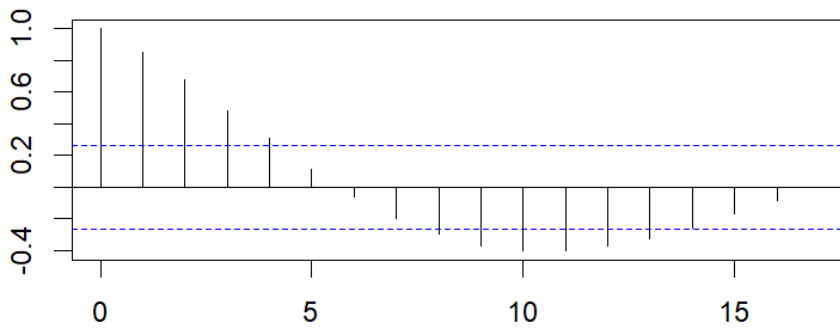


Figure 44 *Autocorrelation disposable income Hungary.*

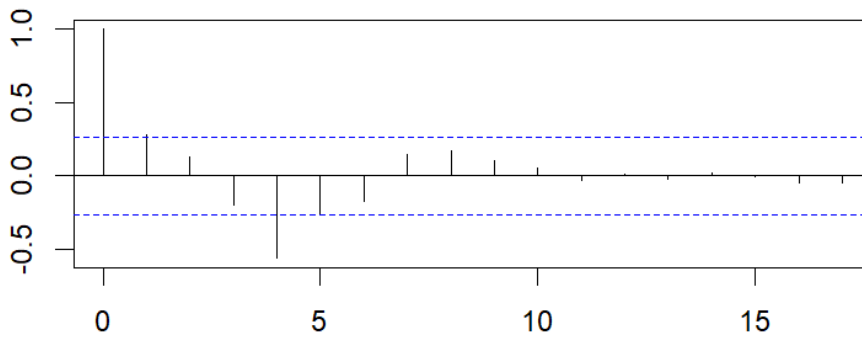


Figure 45 *Autocorrelation Gini-index of Hungary.*

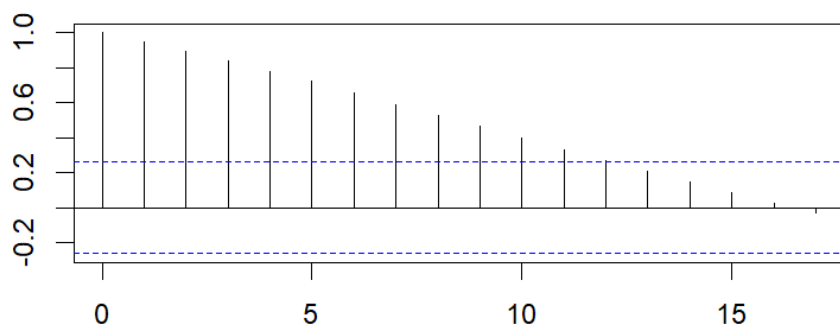


Figure 46 *Autocorrelation life expectancy of Hungary.*

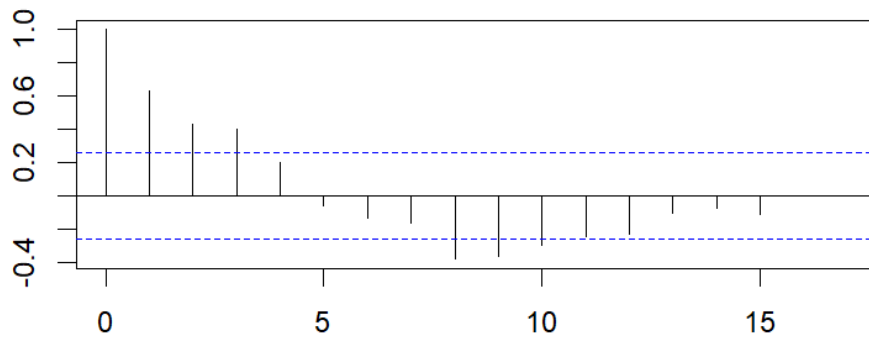


Figure 47 *Autocorrelation unmet health care needs Hungary.*

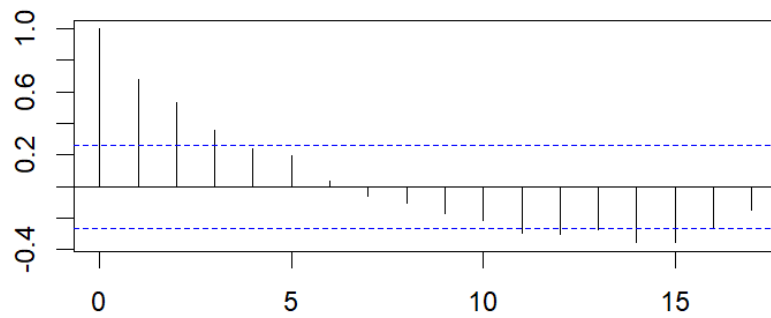


Figure 48 *Autocorrelation PHS highest quintile Hungary.*

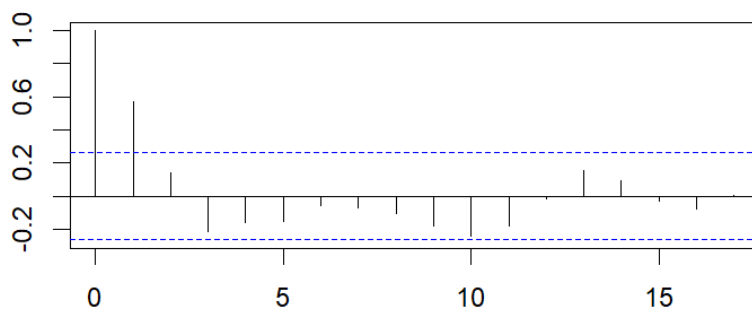


Figure 49 *Autocorrelation PHS lowest quintile Hungary.*

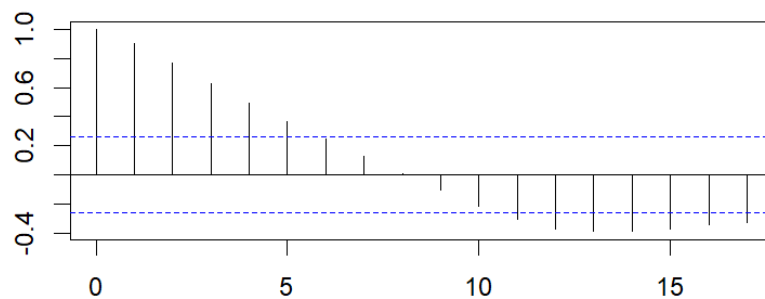


Figure 50 *Autocorrelation education Hungary.*

Denmark

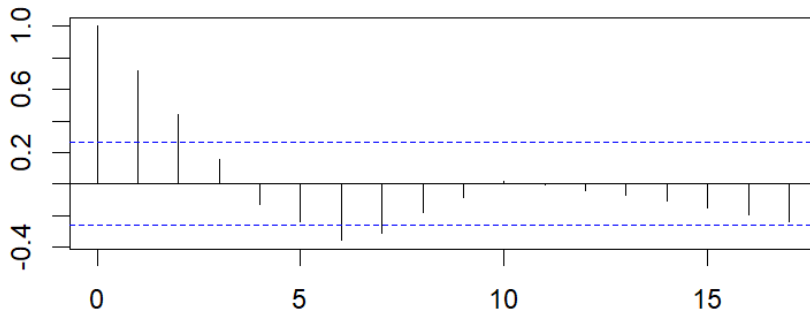


Figure 51 *Autocorrelation vote share of Denmark.*

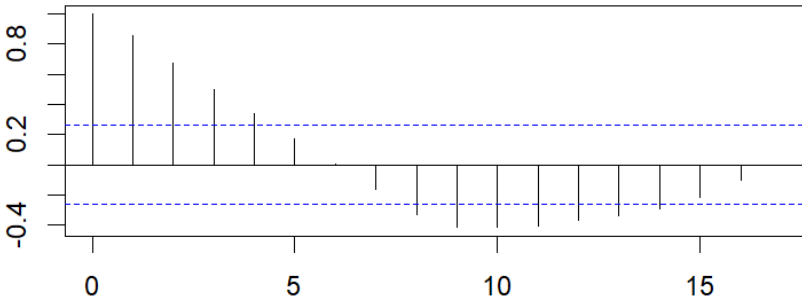


Figure 52 *Autocorrelation disposable income Denmark*

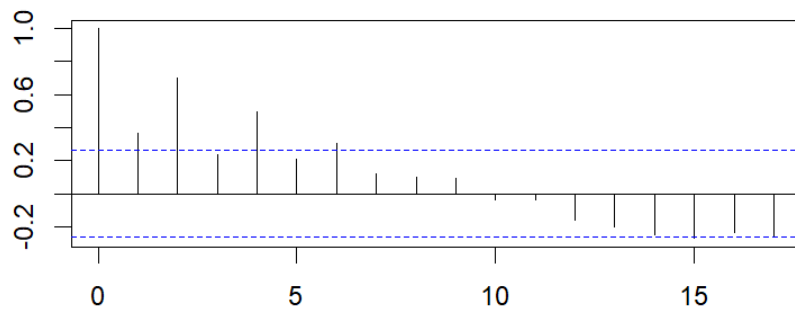


Figure 53 *Time series Gini-index of Denmark.*

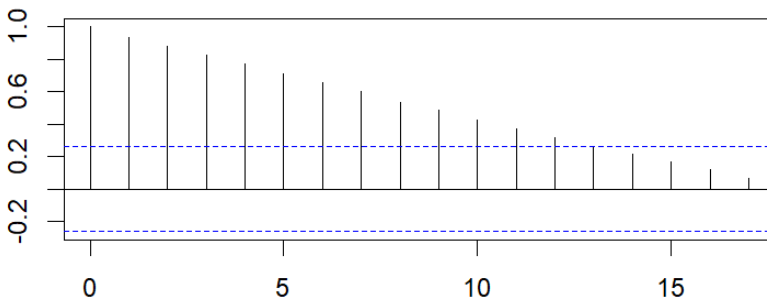


Figure 54 *Autocorrelation life expectancy of Denmark.*

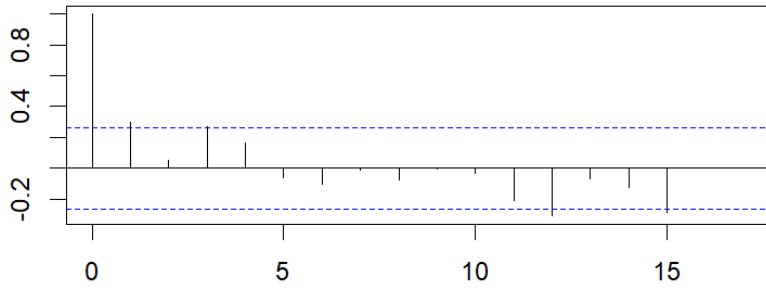


Figure 55 *Autocorrelation unmet health care needs Denmark.*

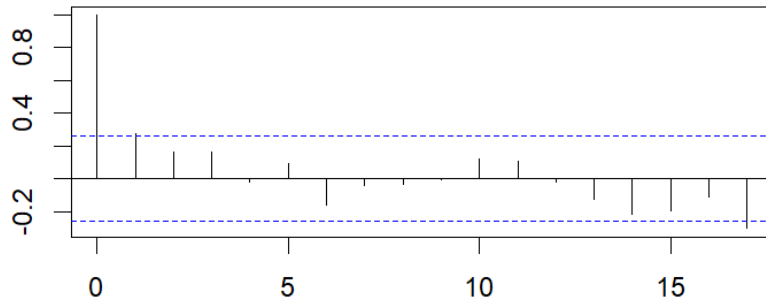


Figure 56 *Autocorrelation PHS highest quintile Denmark.*

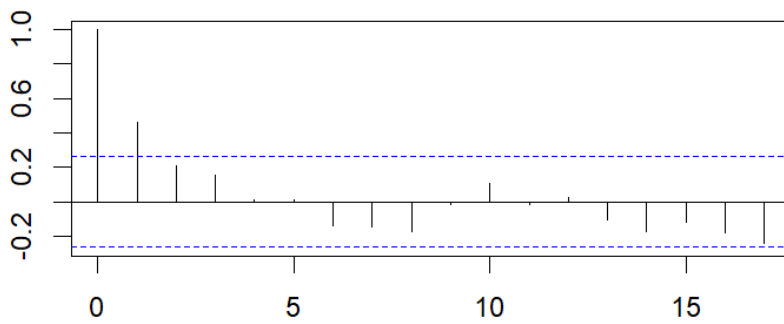


Figure 57 *Autocorrelation PHS lowest quintile Denmark.*

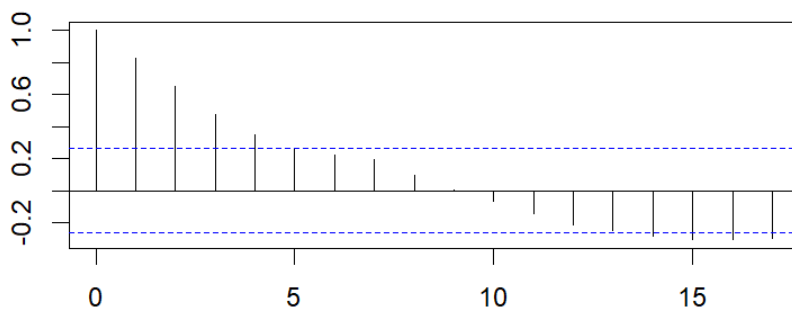


Figure 58 *Autocorrelation education Denmark.*

Poland

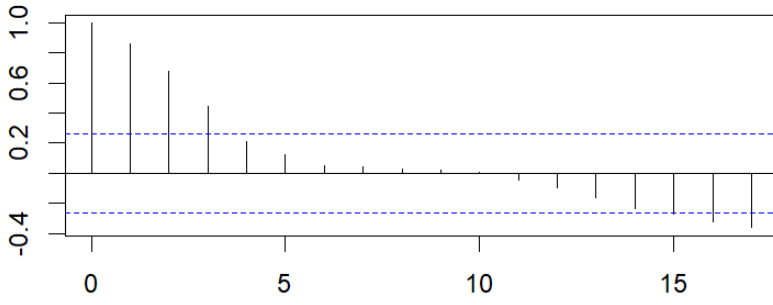


Figure 59 *Autocorrelation of vote share of Poland.*

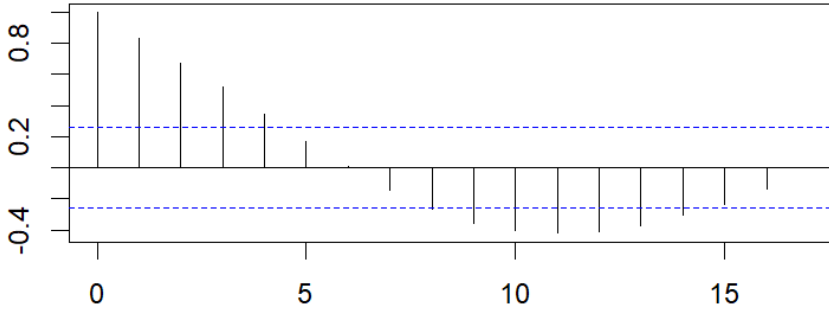


Figure 60 *Autocorrelation disposable income Poland.*

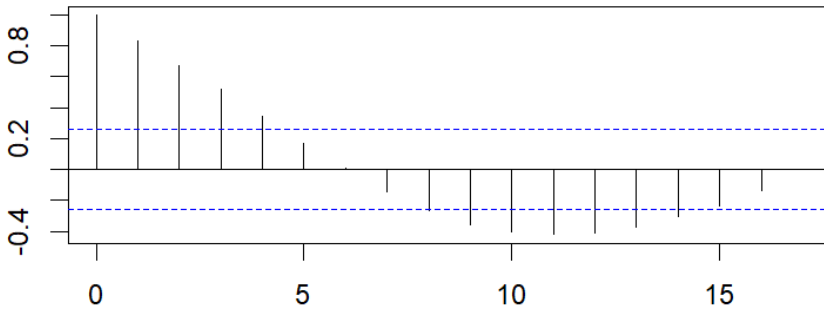


Figure 61 *Autocorrelation Gini-index of Poland.*

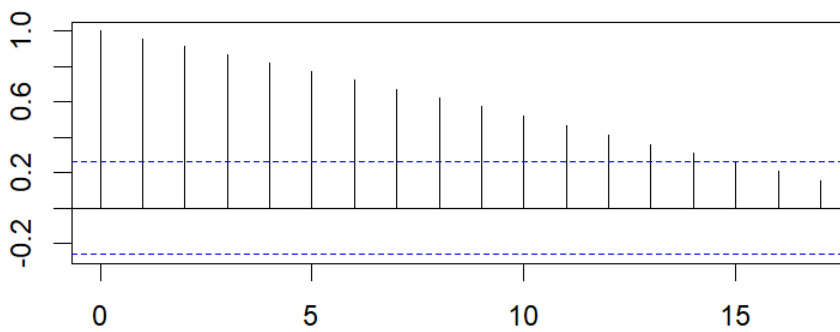


Figure 62 *Autocorrelation life expectancy of Poland.*

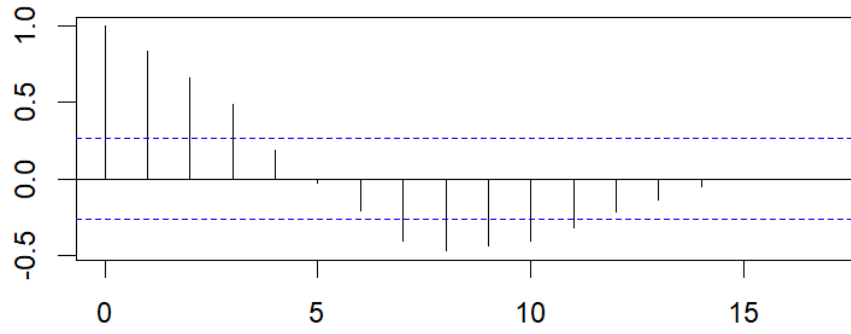


Figure 63 *Autocorrelation life unmet health care needs Poland.*

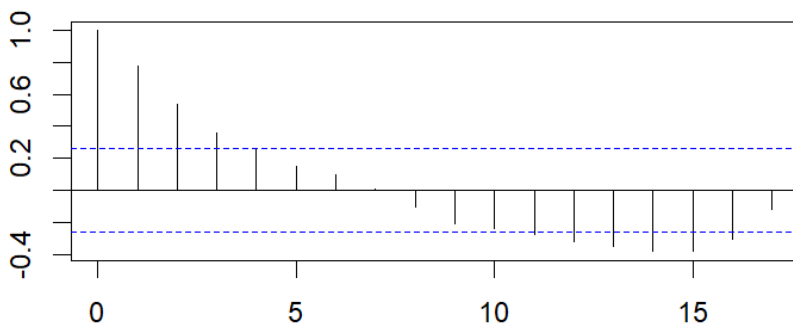


Figure 64 *Autocorrelation PHS highest quintile Poland.*

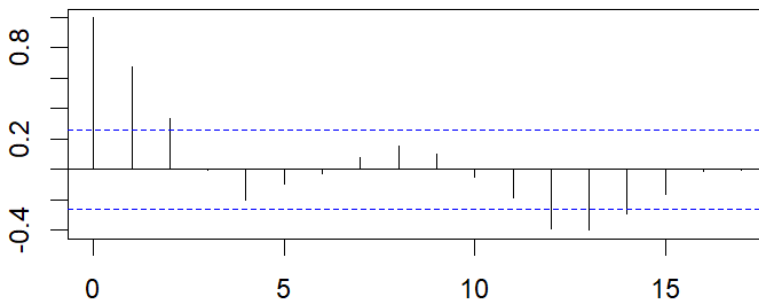


Figure 65 *Autocorrelation PHS lowest quintile Poland.*

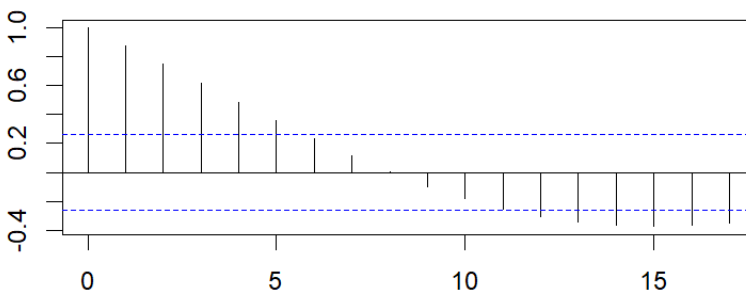


Figure 66 *Autocorrelation education Poland.*

Ireland

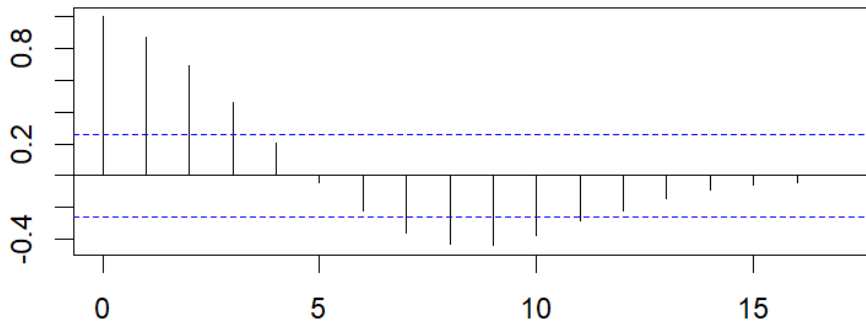


Figure 67 *Time series disposable income Ireland.*

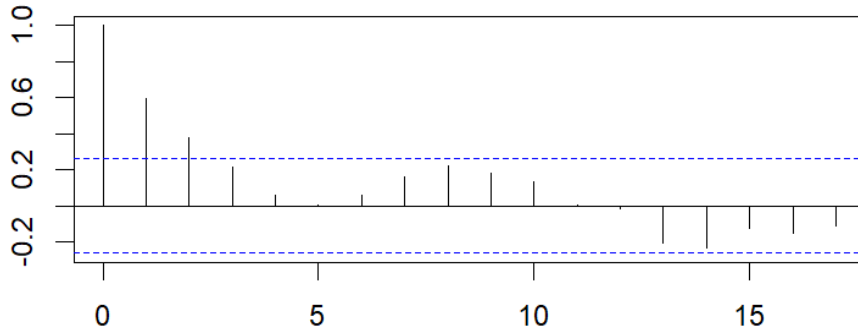


Figure 68 *Autocorrelation Gini-index of Ireland.*

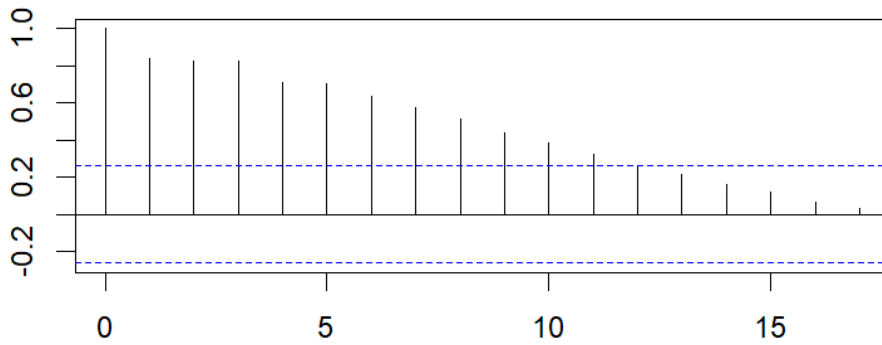


Figure 69 *Autocorrelation life expectancy of Ireland.*

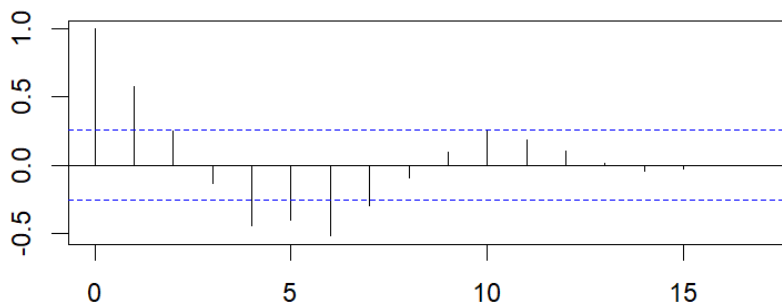


Figure 70 *Autocorrelation unmet health care needs Ireland.*

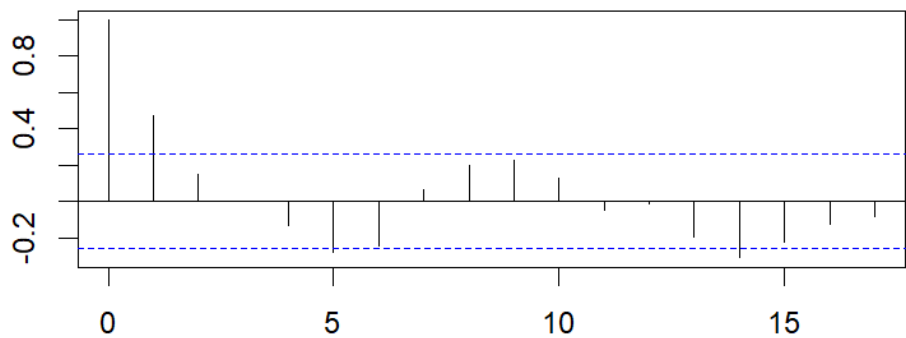


Figure 71 *Autocorrelation PHS highest quintile Ireland.*

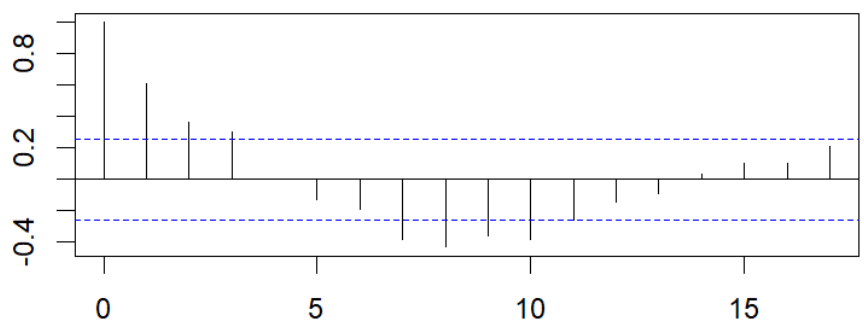


Figure 72 *Autocorrelation PHS lowest quintile Ireland.*

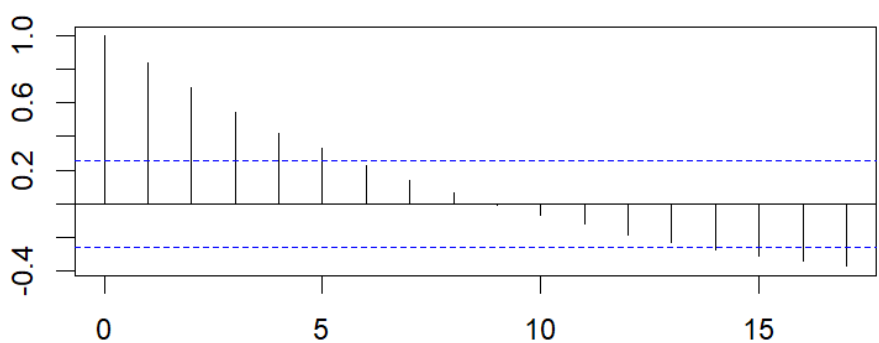
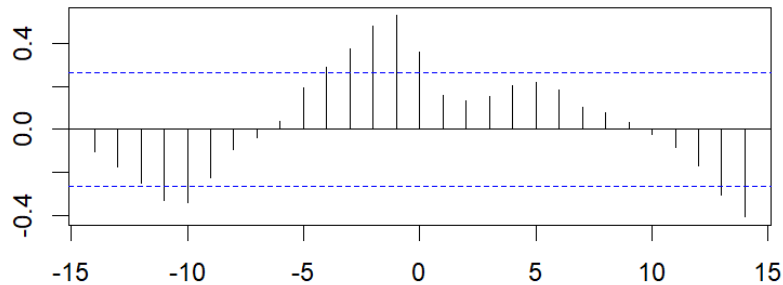


Figure 73 *Autocorrelation education Ireland.*

Appendix 8 – Cross-correlations

The Netherlands

CCF NLD Disposable Income and Vote Share

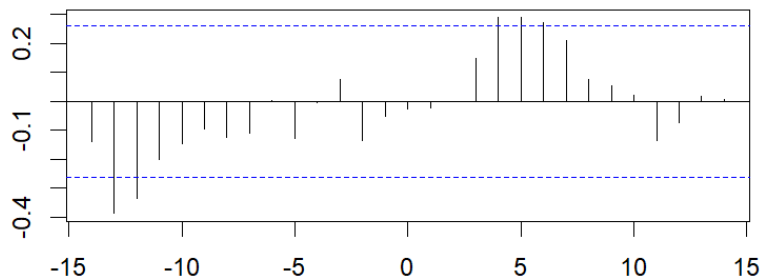


Autocorrelations of series 'X', by lag

-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4
-0.103	-0.176	-0.246	-0.331	-0.338	-0.222	-0.094	-0.038	0.036	0.194	0.291
-3	-2	-1	0	1	2	3	4	5	6	7
0.372	0.479	0.530	0.359	0.157	0.135	0.154	0.201	0.219	0.181	0.102
8	9	10	11	12	13	14				
0.079	0.034	-0.024	-0.083	-0.170	-0.302	-0.406				

Figure 74 Cross-correlation disposable income and PRR vote share the Netherlands.

CCF NLD Gini and Vote Share

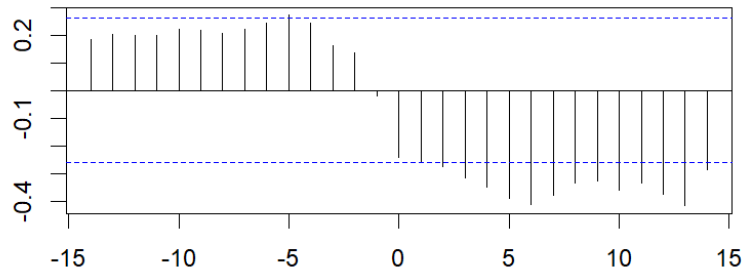


Autocorrelations of series 'X', by lag

-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4
-0.139	-0.387	-0.336	-0.201	-0.145	-0.097	-0.126	-0.111	0.003	-0.129	-0.006
-3	-2	-1	0	1	2	3	4	5	6	7
0.075	-0.135	-0.051	-0.027	-0.023	-0.002	0.149	0.290	0.290	0.273	0.209
8	9	10	11	12	13	14				
0.075	0.054	0.023	-0.135	-0.072	0.019	0.007				

Figure 75 Cross-correlation Gini-index and PRR vote share the Netherlands.

CCF NLD Life Expectancy and Vote Share

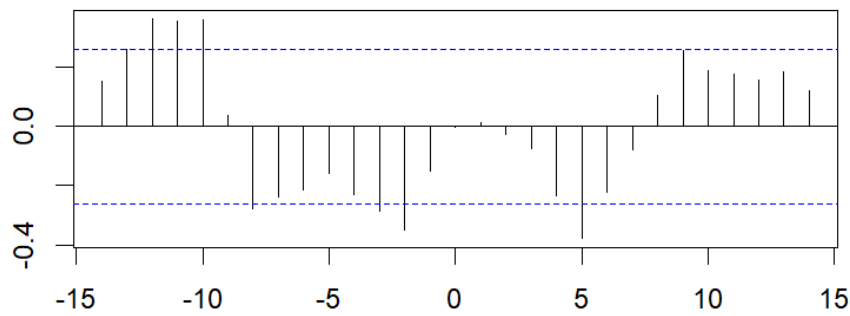


Autocorrelations of series 'x', by lag

-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4
0.186	0.206	0.201	0.202	0.221	0.220	0.210	0.222	0.247	0.275	0.245
-3	-2	-1	0	1	2	3	4	5	6	7
0.163	0.136	-0.020	-0.242	-0.259	-0.274	-0.316	-0.350	-0.391	-0.412	-0.380
8	9	10	11	12	13	14				
-0.335	-0.328	-0.361	-0.334	-0.376	-0.417	-0.286				

Figure 76 Cross-correlation life expectancy and PRR vote share the Netherlands.

CCF NLD Unmet Health Care Needs and Vote Share



-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4
0.152	0.262	0.365	0.356	0.360	0.038	-0.278	-0.237	-0.215	-0.158	-0.231
-3	-2	-1	0	1	2	3	4	5	6	7
-0.287	-0.350	-0.151	-0.001	0.014	-0.027	-0.074	-0.234	-0.379	-0.222	-0.077
8	9	10	11	12	13	14				
0.106	0.257	0.189	0.176	0.157	0.184	0.123				

Figure 77 Cross-correlation unmet health care needs and PRR vote share the Netherlands.

CCF NLD PHS high income and Vote Share

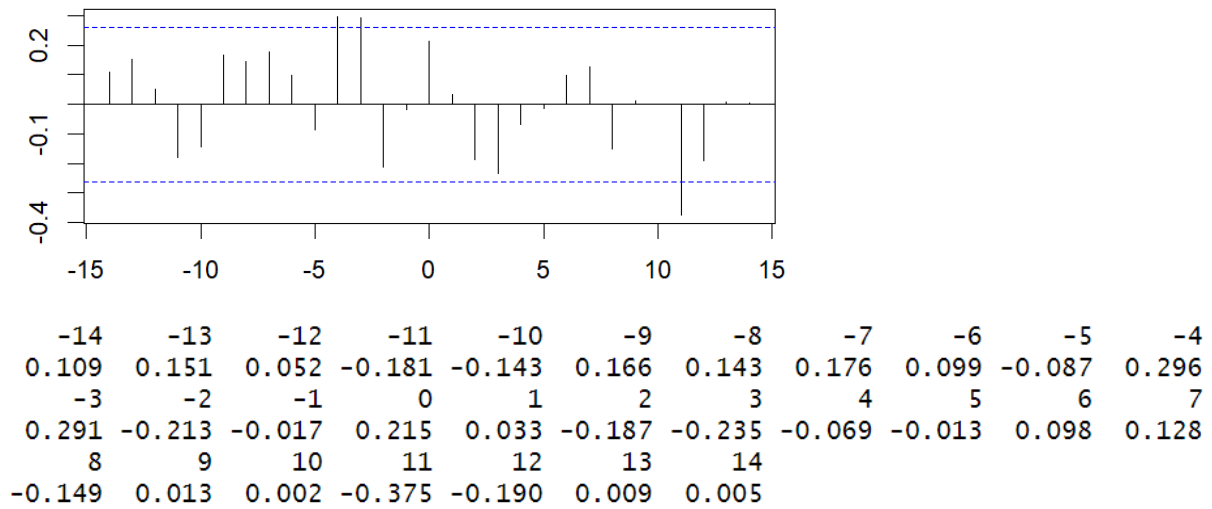


Figure 78 Cross-correlation PHS high income and PRR vote share the Netherlands.

CCF NLD PHS low income and Vote Share

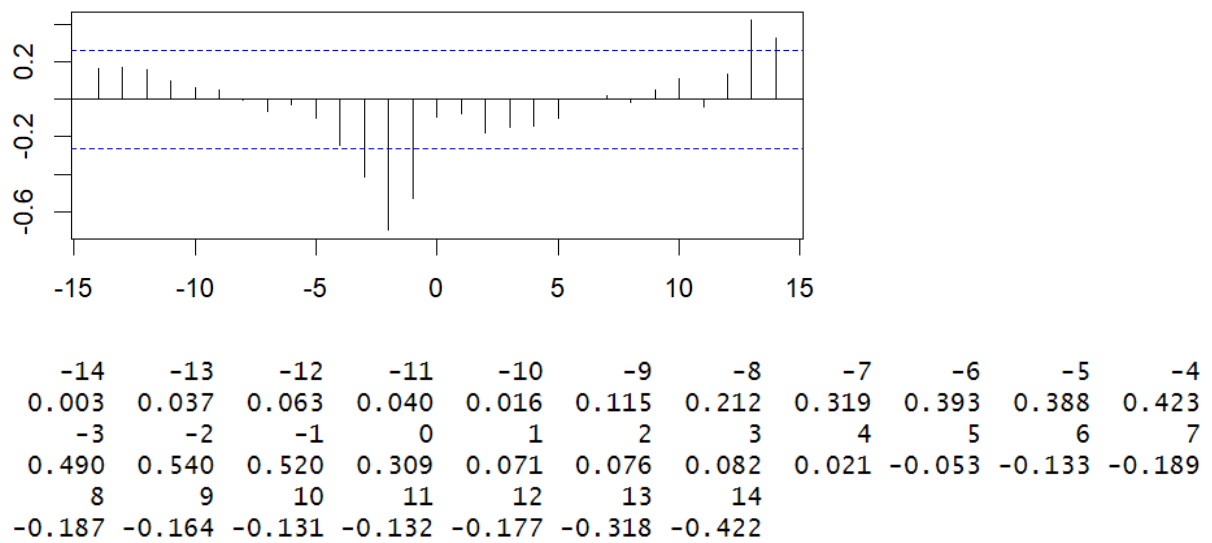
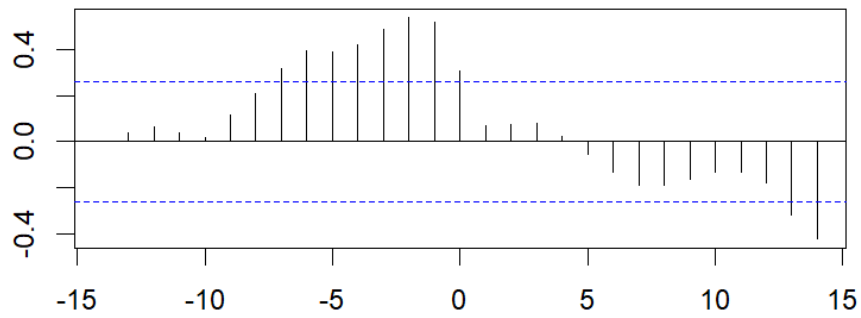


Figure 79 Cross-correlation PHS low income and PRR vote share the Netherlands.

CCF NLD Education and Vote Share

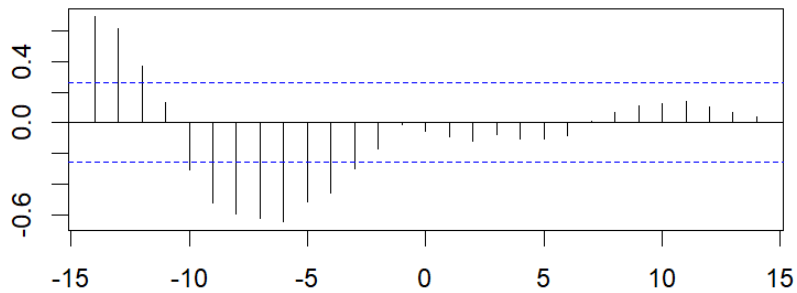


-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4
0.003	0.037	0.063	0.040	0.016	0.115	0.212	0.319	0.393	0.388	0.423
-3	-2	-1	0	1	2	3	4	5	6	7
0.490	0.540	0.520	0.309	0.071	0.076	0.082	0.021	-0.053	-0.133	-0.189
8	9	10	11	12	13	14				
-0.187	-0.164	-0.131	-0.132	-0.177	-0.318	-0.422				

Figure 80 Cross-correlation education and PRR vote share the Netherlands.

Italy

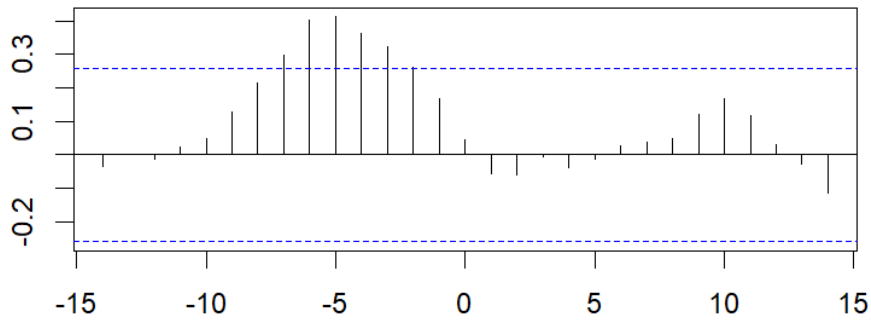
CCF ITA Disposable Income and Vote Share



-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4
0.694	0.617	0.371	0.131	-0.307	-0.521	-0.594	-0.624	-0.648	-0.516	-0.461
-3	-2	-1	0	1	2	3	4	5	6	7
-0.303	-0.169	-0.016	-0.059	-0.094	-0.121	-0.074	-0.103	-0.103	-0.083	0.009
8	9	10	11	12	13	14				
0.066	0.107	0.127	0.140	0.101	0.069	0.035				

Figure 81 Cross-correlation disposable income and PRR vote share Italy.

CCF ITA Gini and Vote Share

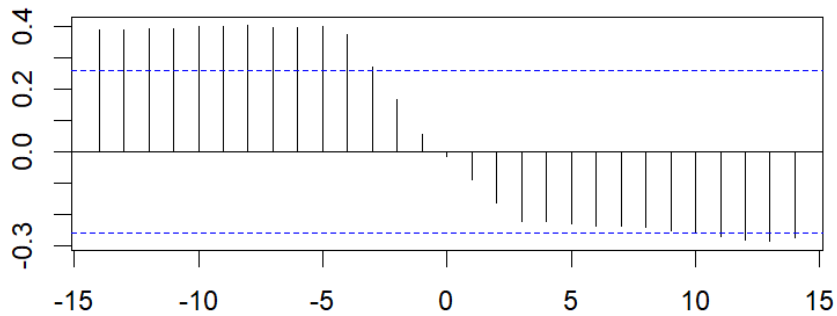


Autocorrelations of series 'X', by lag

-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4
-0.035	0.001	-0.013	0.022	0.049	0.126	0.215	0.300	0.404	0.414	0.361
-3	-2	-1	0	1	2	3	4	5	6	7
0.323	0.262	0.166	0.046	-0.057	-0.059	-0.007	-0.039	-0.012	0.027	0.038
8	9	10	11	12	13	14				
0.050	0.121	0.169	0.116	0.031	-0.026	-0.114				

Figure 82 Cross-correlation Gini-index and PRR vote share Italy.

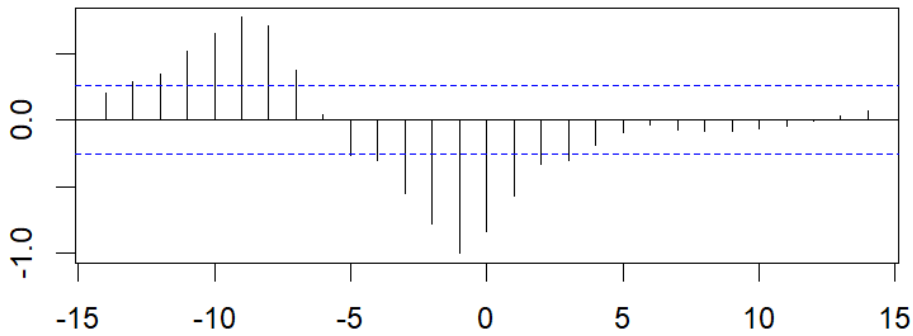
CCF ITA Life Expectancy and Vote Share



-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4
0.390	0.390	0.393	0.395	0.401	0.399	0.404	0.396	0.397	0.399	0.374
-3	-2	-1	0	1	2	3	4	5	6	7
0.271	0.166	0.055	-0.016	-0.089	-0.166	-0.224	-0.224	-0.230	-0.239	-0.239
8	9	10	11	12	13	14				
-0.241	-0.254	-0.262	-0.273	-0.283	-0.287	-0.274				

Figure 83 Cross-correlation life expectancy and PRR vote share Italy.

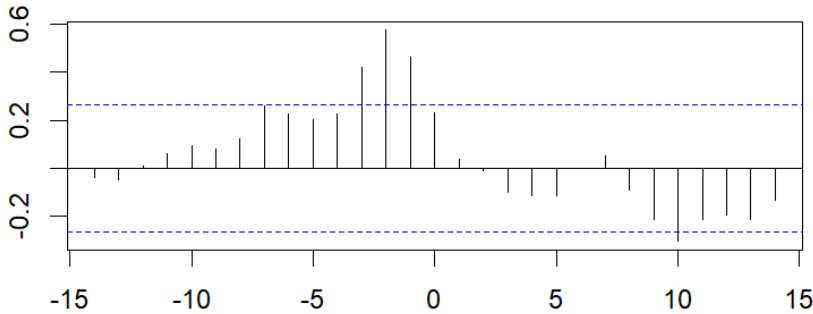
CCF ITA Unmet Health Care Needs and Vote Share



-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4
0.204	0.287	0.346	0.512	0.650	0.771	0.703	0.369	0.036	-0.268	-0.300
-3	-2	-1	0	1	2	3	4	5	6	7
-0.550	-0.778	-1.000	-0.833	-0.575	-0.332	-0.302	-0.190	-0.092	-0.039	-0.075
8	9	10	11	12	13	14				
-0.088	-0.085	-0.067	-0.044	-0.005	0.025	0.071				

Figure 84 Cross-correlation unmet health care needs and PRR vote share Italy.

CCF ITA PHS high income and Vote Share



-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4
-0.037	-0.045	0.010	0.059	0.095	0.082	0.125	0.258	0.227	0.202	0.225
-3	-2	-1	0	1	2	3	4	5	6	7
0.420	0.575	0.461	0.232	0.036	-0.009	-0.097	-0.112	-0.115	0.000	0.051
8	9	10	11	12	13	14				
-0.090	-0.210	-0.302	-0.211	-0.194	-0.214	-0.133				

Figure 85 Cross-correlation PHS high income group and PRR vote share Italy.

CCF ITA PHS low income and Vote Share

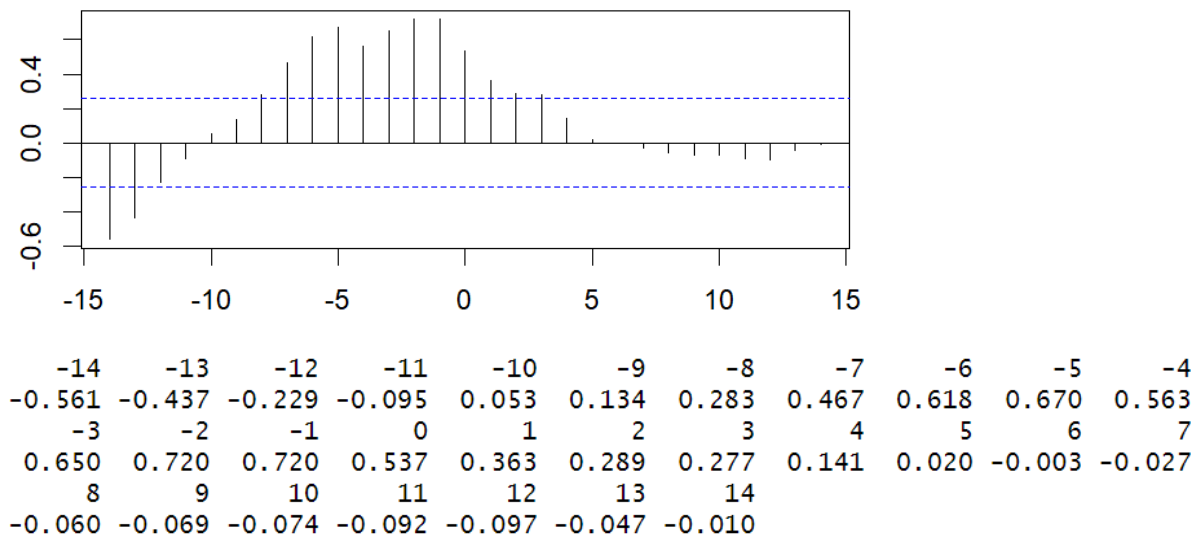


Figure 86 Cross-correlation PHS low income group and PRR vote share Italy.

CCF ITA Education and Vote Share

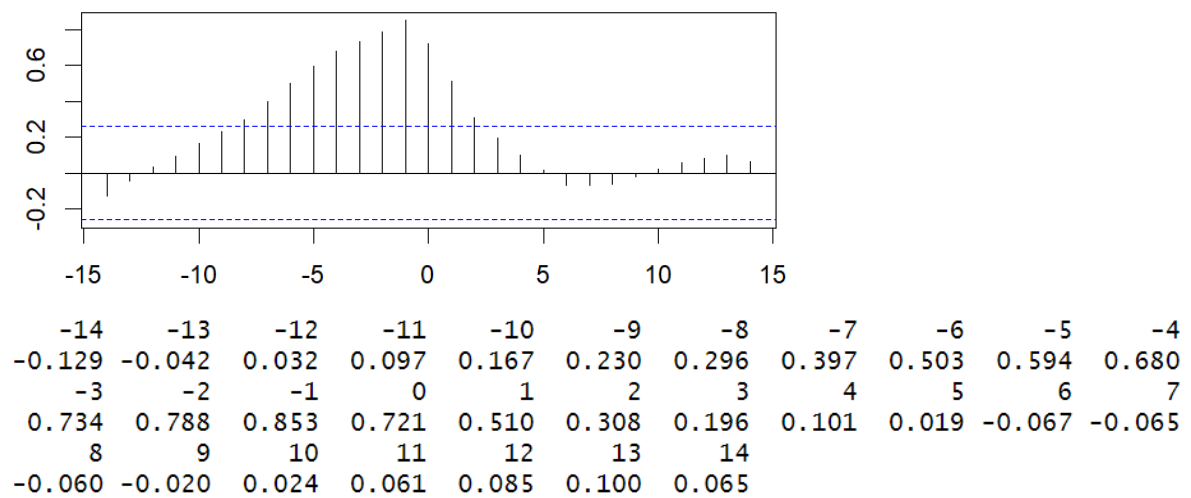
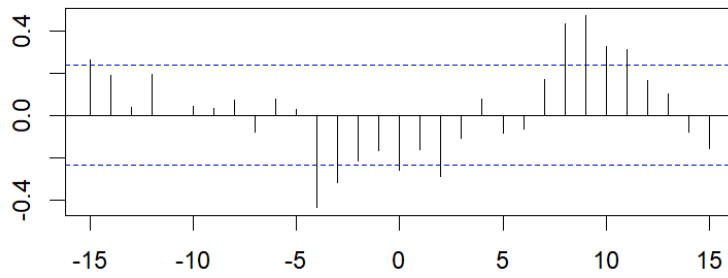


Figure 87 Cross-correlation education and PRR vote share Italy.

Austria

CCF AUT Disposable Income and Vote Share

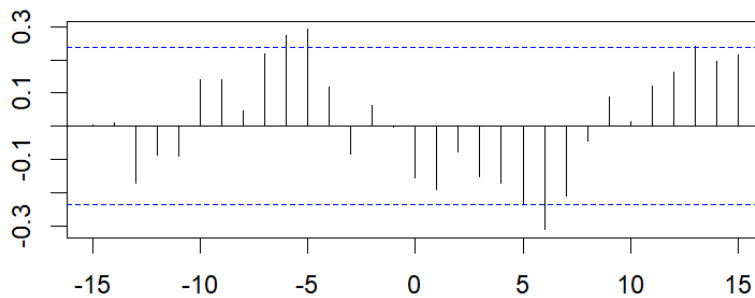


Autocorrelations of series 'x', by lag

-15	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5
0.261	0.188	0.038	0.193	-0.003	0.041	0.035	0.070	-0.081	0.077	0.027
-4	-3	-2	-1	0	1	2	3	4	5	6
-0.437	-0.321	-0.214	-0.168	-0.261	-0.162	-0.288	-0.110	0.079	-0.084	-0.067
7	8	9	10	11	12	13	14	15		
0.168	0.434	0.473	0.328	0.310	0.166	0.100	-0.079	-0.159		

Figure 88 Cross-correlation disposable income and PRR vote share Austria.

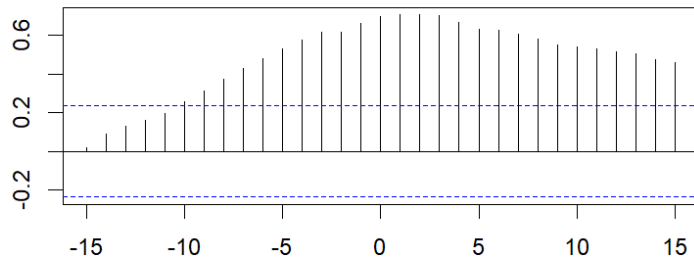
CCF AUT Gini and Vote Share



-15	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5
0.003	0.010	-0.171	-0.088	-0.090	0.141	0.140	0.045	0.217	0.273	0.292
-4	-3	-2	-1	0	1	2	3	4	5	6
0.118	-0.085	0.062	-0.003	-0.154	-0.192	-0.077	-0.152	-0.170	-0.236	-0.311
7	8	9	10	11	12	13	14	15		
-0.209	-0.045	0.089	0.012	0.120	0.164	0.241	0.195	0.214		

Figure 89 Cross-correlation Gini-index and PRR vote share Austria.

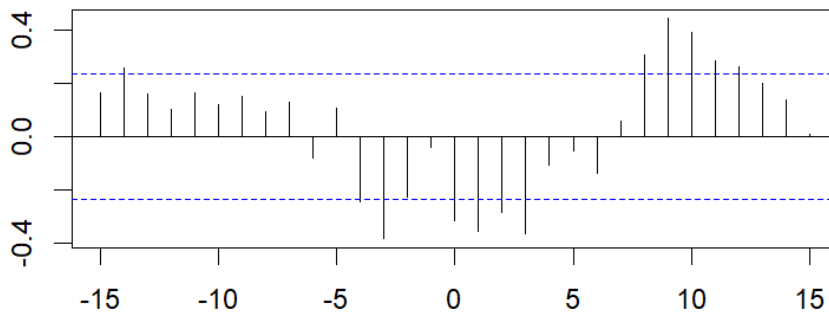
CCF AUT Life Expectancy and Vote Share



-15	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3
0.021	0.091	0.132	0.161	0.196	0.255	0.311	0.372	0.431	0.481	0.530	0.574	0.618
-2	-1	0	1	2	3	4	5	6	7	8	9	10
0.617	0.661	0.700	0.708	0.706	0.702	0.665	0.631	0.626	0.605	0.579	0.551	0.540
11	12	13	14	15								
0.529	0.518	0.504	0.473	0.459								

Figure 90 Cross-correlation life expectancy and PRR vote share Austria.

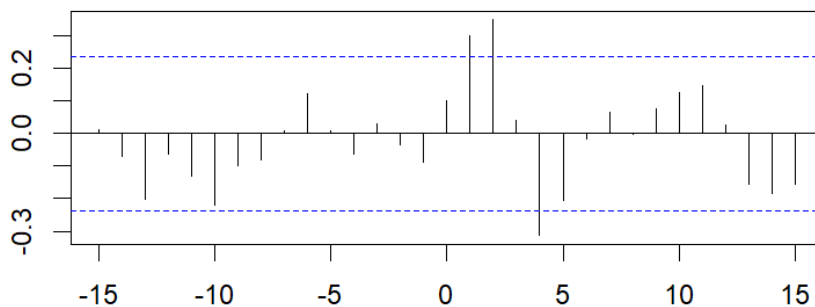
CCF AUT Unmet Health Care Needs and Vote Share



-15	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5		
0.165	0.258	0.162	0.103	0.165	0.120	0.151	0.092	0.128	-0.082	0.106		
-4	-3	-2	-1	0	1	2	3	4	5	6		
-0.246	-0.384	-0.229	-0.040	-0.314	-0.354	-0.283	-0.364	-0.106	-0.054	-0.139		
7	8	9	10	11	12	13	14	15				
0.059	0.307	0.445	0.392	0.286	0.262	0.199	0.138	0.008				

Figure 91 Cross-correlation unmet health care needs and PRR vote share Austria.

CCF AUT PHS high income and Vote Share



-15	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5
0.012	-0.069	-0.202	-0.062	-0.132	-0.219	-0.097	-0.083	0.009	0.122	0.007
-4	-3	-2	-1	0	1	2	3	4	5	6
-0.062	0.030	-0.035	-0.088	0.099	0.299	0.349	0.040	-0.313	-0.207	-0.017
7	8	9	10	11	12	13	14	15		
0.063	-0.003	0.074	0.126	0.146	0.025	-0.158	-0.184	-0.156		

Figure 92 Cross-correlation PHS high income group and PRR vote share Austria.

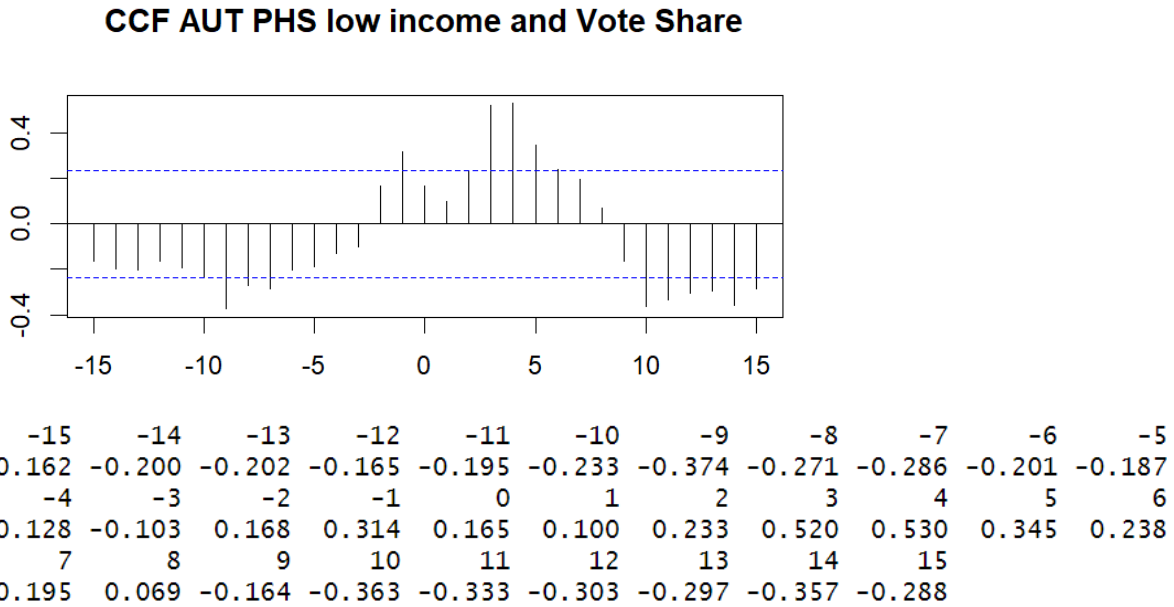


Figure 93 Cross-correlation PHS low income group and PRR vote share Austria.

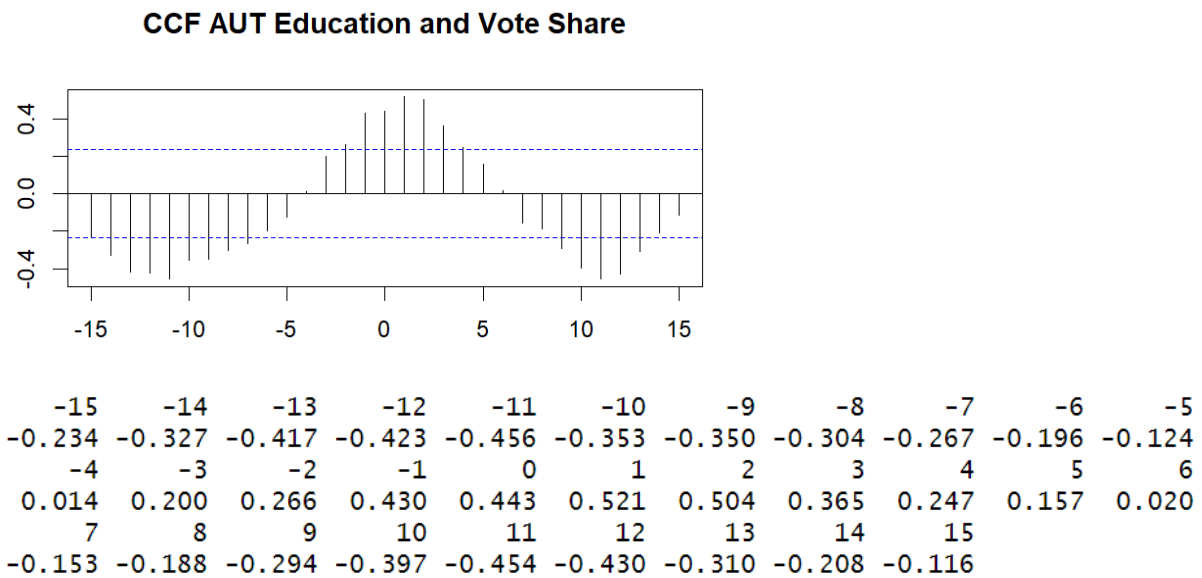
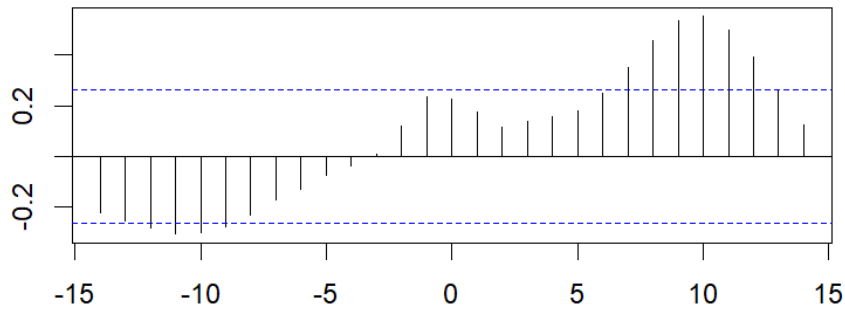


Figure 94 Cross-correlation education and PRR vote share Austria.

Hungary

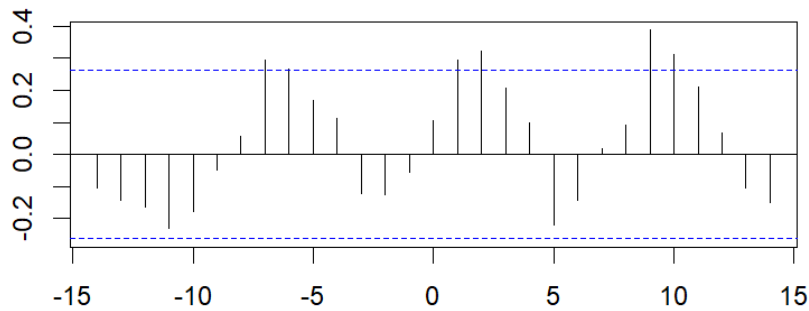
CCF HUN Disposable Income and Vote Share



-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4
-0.223	-0.252	-0.282	-0.305	-0.300	-0.276	-0.232	-0.171	-0.131	-0.073	-0.039
-3	-2	-1	0	1	2	3	4	5	6	7
0.007	0.120	0.234	0.224	0.174	0.115	0.140	0.158	0.179	0.250	0.350
8	9	10	11	12	13	14				
0.454	0.537	0.553	0.496	0.391	0.261	0.124				

Figure 95 Cross-correlation disposable income and PRR vote share Hungary.

CCF HUN Gini and Vote Share



-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4
-0.103	-0.142	-0.162	-0.230	-0.177	-0.048	0.056	0.296	0.266	0.168	0.112
-3	-2	-1	0	1	2	3	4	5	6	7
-0.122	-0.126	-0.054	0.106	0.295	0.322	0.208	0.099	-0.220	-0.141	0.017
8	9	10	11	12	13	14				
0.091	0.389	0.313	0.211	0.068	-0.104	-0.150				

Figure 96 Cross-correlation Gini-index and PRR vote share Hungary.

CCF HUN Life Expectancy and Vote Share

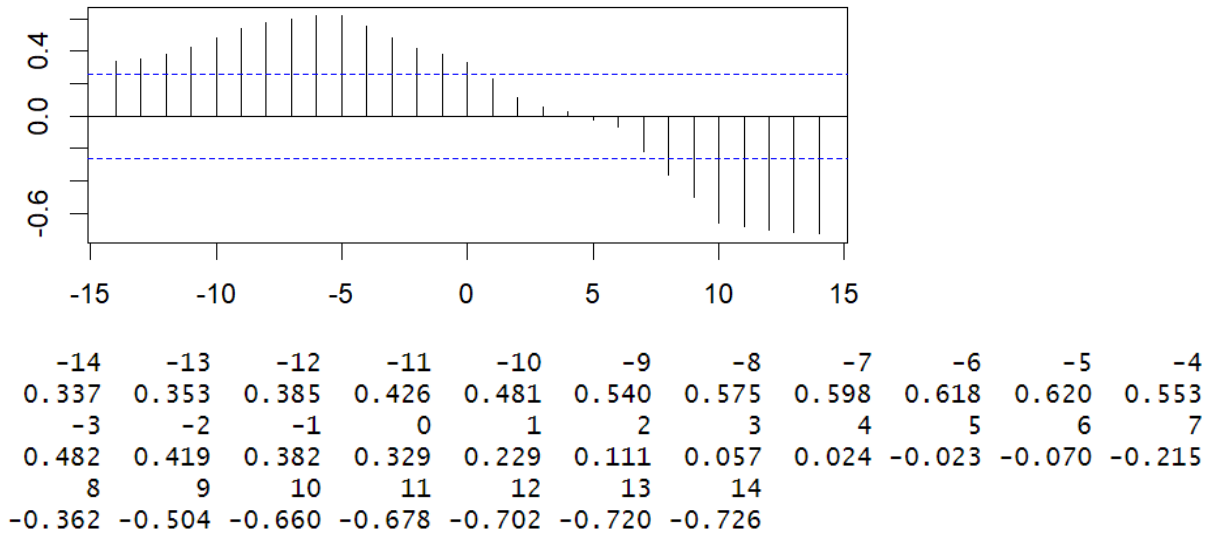


Figure 97 Cross-correlation life expectancy and PRR vote share Hungary.

CCF HUN Unmet Health Care Needs and Vote Share

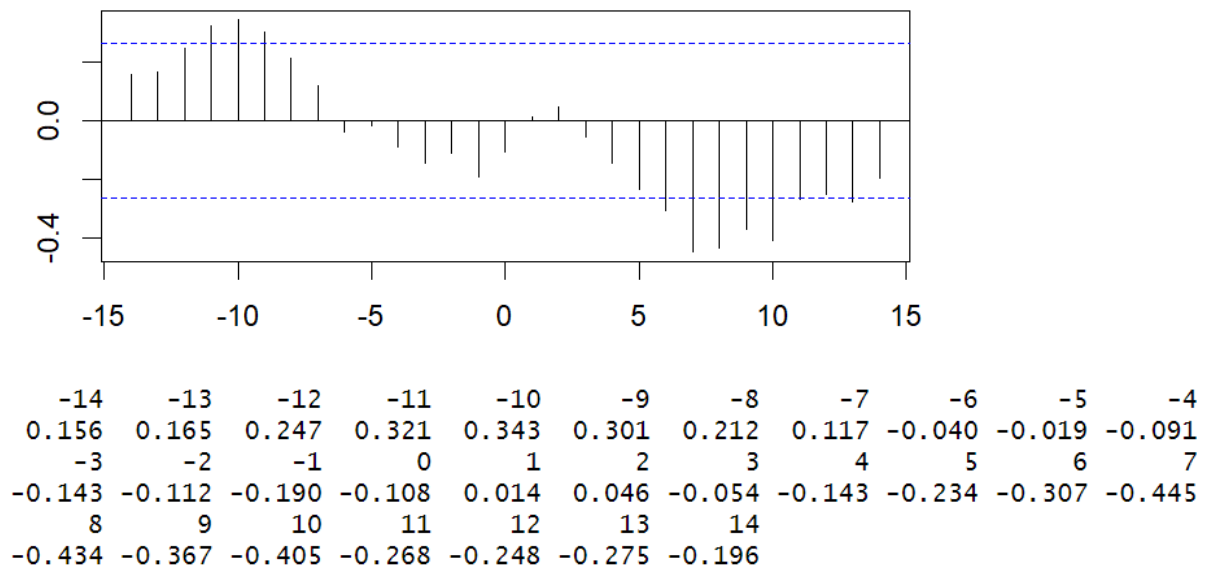


Figure 98 Cross-correlation unmet health care needs and PRR vote share Hungary.

CCF HUN PHS high income and Vote Share

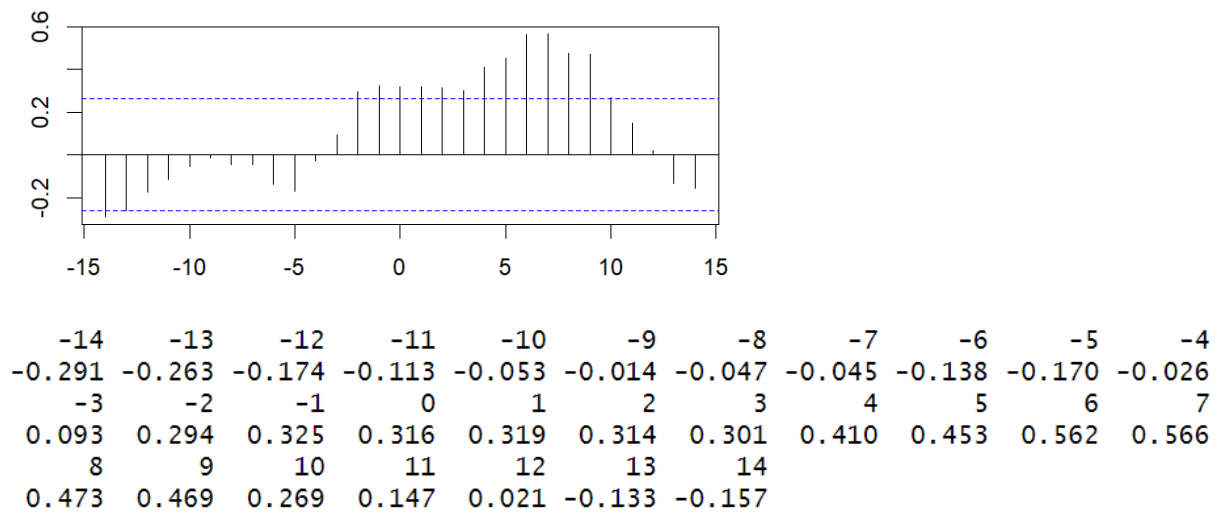


Figure 99 Cross-correlation PHS high income group and PRR vote share Hungary.

CCF HUN PHS low income and Vote Share

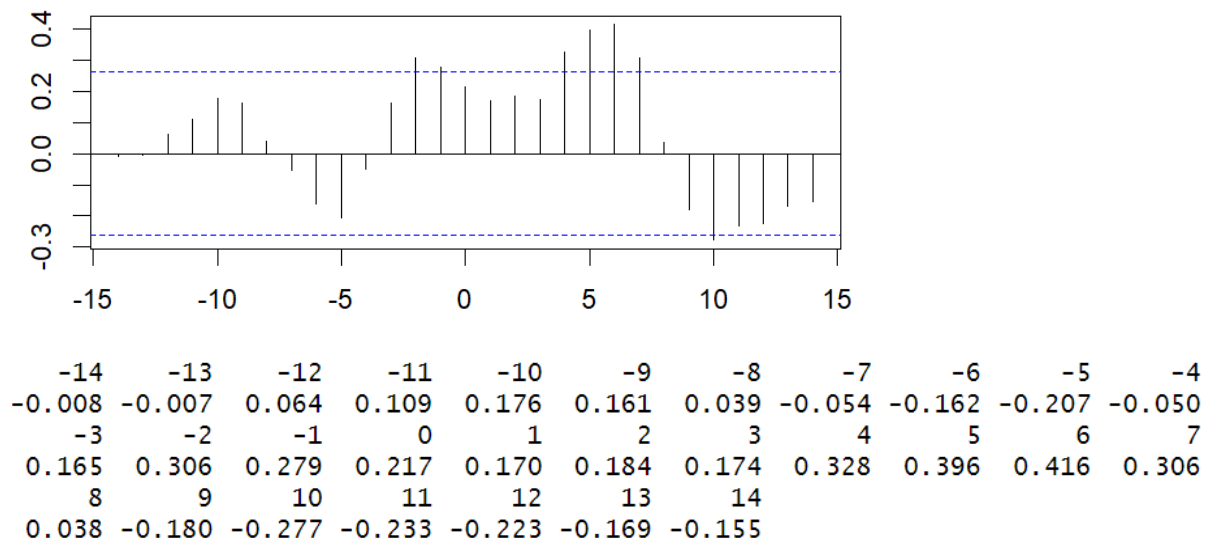
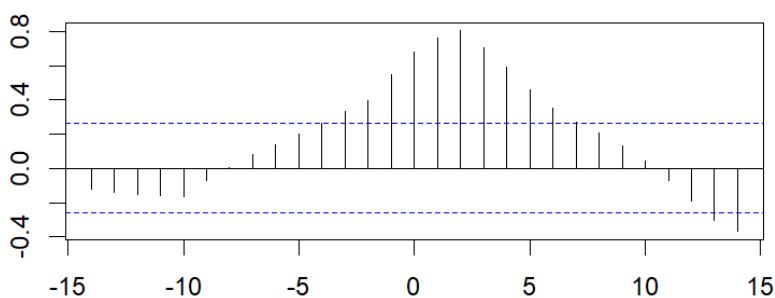


Figure 100 Cross-correlation PHS low income group and PRR vote share Hungary.

CCF HUN Education and Vote Share

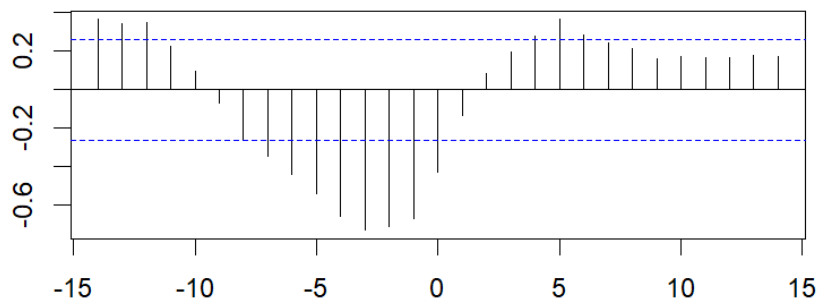


-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4
-0.121	-0.142	-0.150	-0.159	-0.162	-0.069	0.007	0.079	0.139	0.201	0.262
-3	-2	-1	0	1	2	3	4	5	6	7
0.332	0.395	0.547	0.682	0.760	0.805	0.707	0.589	0.461	0.350	0.270
8	9	10	11	12	13	14				
0.205	0.133	0.042	-0.068	-0.192	-0.303	-0.368				

Figure 101 *Cross-correlation education and PRR vote share Hungary.*

Denmark

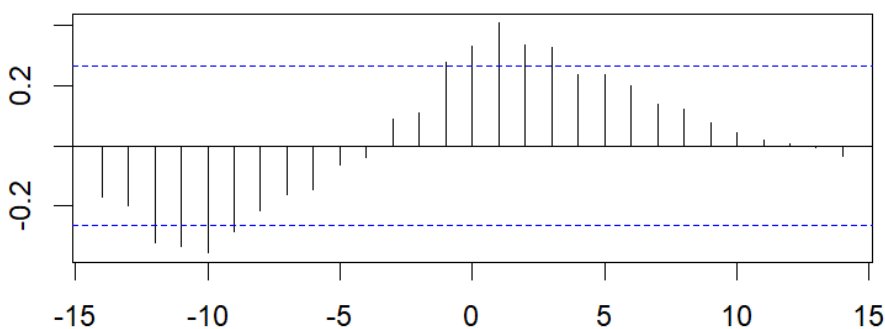
CCF DNK Disposable Income and Vote Share



-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4
0.365	0.344	0.351	0.228	0.097	-0.069	-0.259	-0.345	-0.439	-0.542	-0.661
-3	-2	-1	0	1	2	3	4	5	6	7
-0.732	-0.711	-0.674	-0.430	-0.137	0.085	0.197	0.280	0.367	0.285	0.245
8	9	10	11	12	13	14				
0.212	0.160	0.172	0.167	0.168	0.179	0.174				

Figure 102 *Cross-correlation disposable income and PRR vote share Denmark.*

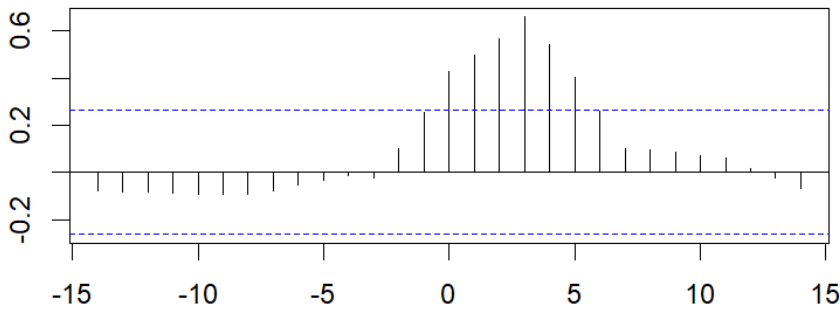
CCF DNK Gini and Vote Share



-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4
-0.171	-0.200	-0.320	-0.334	-0.354	-0.283	-0.214	-0.159	-0.146	-0.063	-0.037
-3	-2	-1	0	1	2	3	4	5	6	7
0.086	0.108	0.275	0.327	0.406	0.331	0.324	0.237	0.234	0.198	0.136
8	9	10	11	12	13	14				
0.122	0.075	0.045	0.018	0.008	-0.005	-0.036				

Figure 103 *Cross-correlation Gini-index and PRR vote share Denmark.*

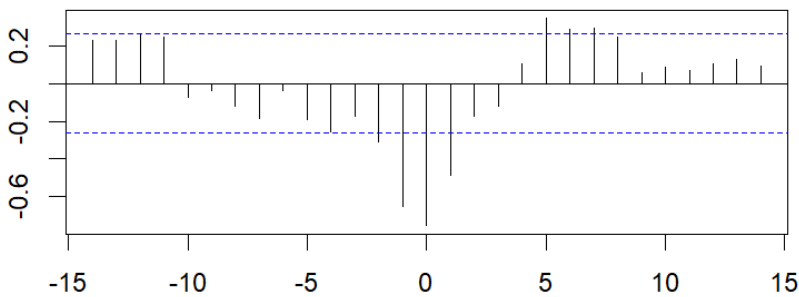
CCF DNK Life Expectancy and Vote Share



-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4
-0.080	-0.081	-0.085	-0.089	-0.090	-0.094	-0.093	-0.076	-0.053	-0.034	-0.014
-3	-2	-1	0	1	2	3	4	5	6	7
-0.024	0.100	0.254	0.426	0.497	0.565	0.660	0.542	0.401	0.260	0.102
8	9	10	11	12	13	14				
0.094	0.085	0.072	0.059	0.017	-0.025	-0.066				

Figure 104 Cross-correlation life expectancy and PRR vote share Denmark.

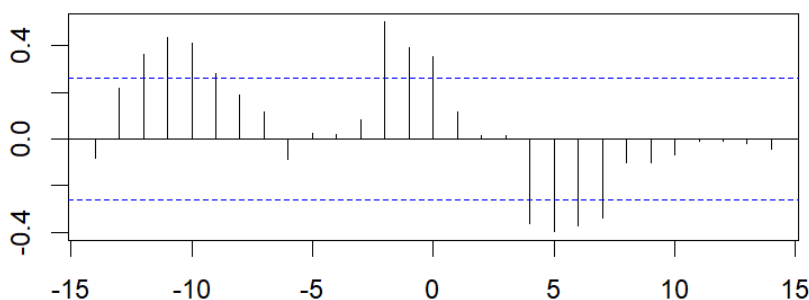
CCF DNK Unmet Health Care Needs and Vote Share



-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4
0.231	0.226	0.263	0.243	-0.072	-0.038	-0.122	-0.185	-0.038	-0.193	-0.255
-3	-2	-1	0	1	2	3	4	5	6	7
-0.172	-0.309	-0.649	-0.753	-0.488	-0.172	-0.120	0.106	0.346	0.288	0.295
8	9	10	11	12	13	14				
0.243	0.055	0.084	0.067	0.102	0.126	0.090				

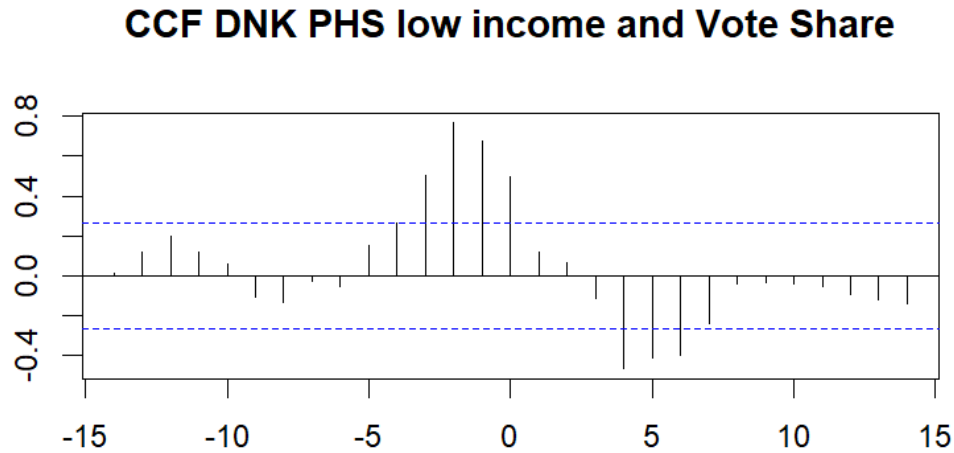
Figure 105 Cross-correlation unmet health care needs and PRR vote share Denmark.

CCF DNK PHS high income and Vote Share



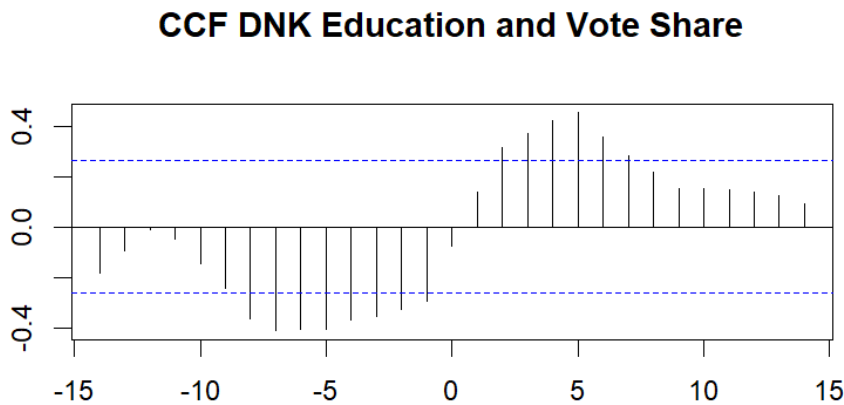
-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4
-0.085	0.219	0.363	0.433	0.412	0.282	0.190	0.116	-0.088	0.024	0.021
-3	-2	-1	0	1	2	3	4	5	6	7
0.082	0.502	0.390	0.351	0.114	0.015	0.015	-0.364	-0.397	-0.374	-0.341
8	9	10	11	12	13	14				
-0.099	-0.102	-0.067	-0.009	-0.009	-0.020	-0.044				

Figure 106 Cross-correlation PHS high income group and PRR vote share Denmark.



-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4
0.012	0.121	0.201	0.121	0.062	-0.105	-0.135	-0.028	-0.053	0.155	0.265
-3	-2	-1	0	1	2	3	4	5	6	7
0.503	0.768	0.679	0.495	0.118	0.065	-0.111	-0.465	-0.408	-0.401	-0.242
8	9	10	11	12	13	14				
-0.038	-0.036	-0.041	-0.055	-0.092	-0.122	-0.142				

Figure 107 Cross-correlation PHS low income group and PRR vote share Denmark.



-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4
-0.186	-0.096	-0.014	-0.051	-0.145	-0.245	-0.365	-0.412	-0.409	-0.408	-0.368
-3	-2	-1	0	1	2	3	4	5	6	7
-0.355	-0.327	-0.296	-0.078	0.138	0.314	0.371	0.423	0.453	0.358	0.282
8	9	10	11	12	13	14				
0.217	0.151	0.152	0.149	0.139	0.124	0.092				

Figure 108 Cross-correlation education and PRR vote share Denmark.

Poland

CCF POL Disposable Income and Vote Share

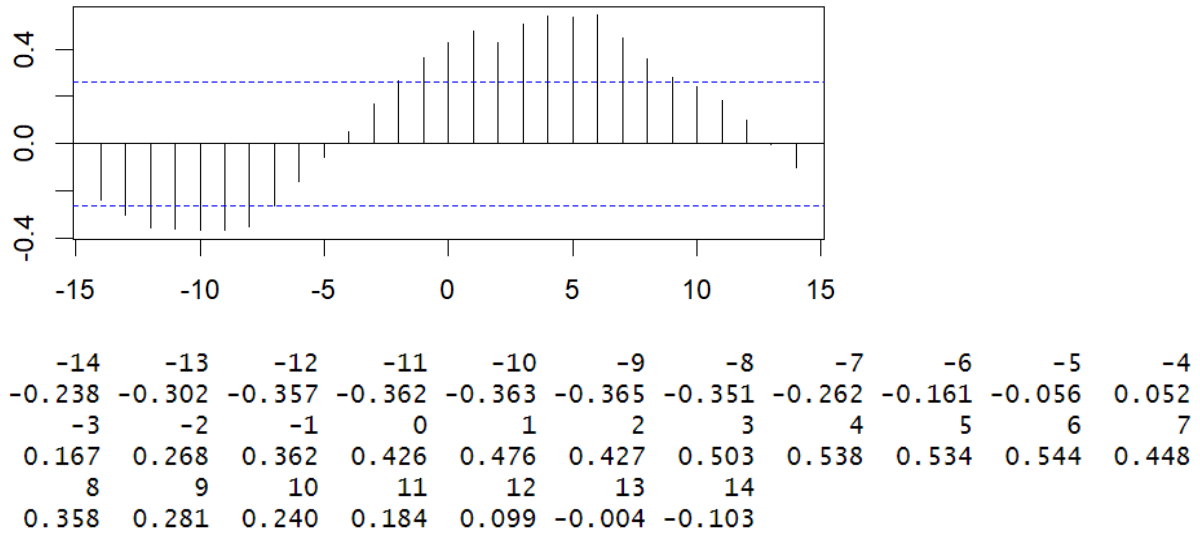


Figure 109 Cross-correlation disposable income and PRR vote share Poland.

CCF POL Gini and Vote Share

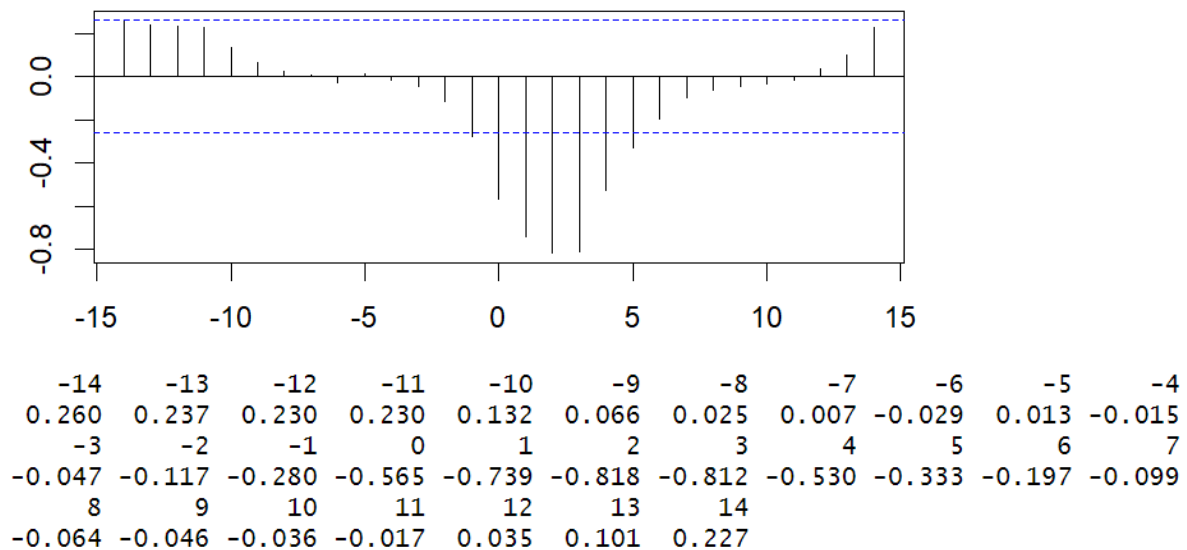
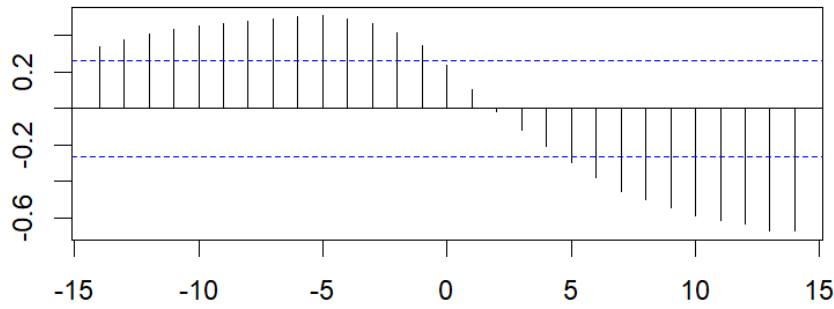


Figure 110 Cross-correlation Gini-index and PRR vote share Poland.

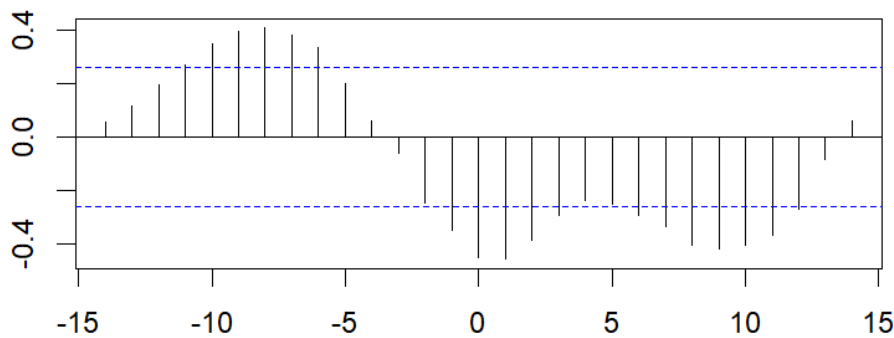
CCF POL Life Expectancy and Vote Share



-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4
0.342	0.374	0.409	0.434	0.455	0.464	0.479	0.494	0.502	0.510	0.491
-3	-2	-1	0	1	2	3	4	5	6	7
0.465	0.418	0.346	0.236	0.104	-0.014	-0.120	-0.206	-0.296	-0.377	-0.453
8	9	10	11	12	13	14				
-0.498	-0.541	-0.587	-0.616	-0.630	-0.669	-0.671				

Figure 111 Cross-correlation life expectancy and PRR vote share Poland.

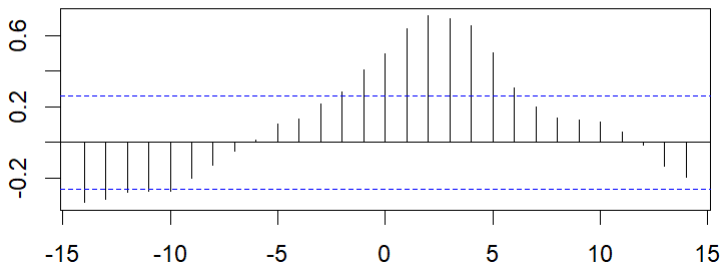
CCF POL Unmet Health Care Needs and Vote Share



-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4
0.056	0.114	0.197	0.270	0.349	0.397	0.410	0.384	0.335	0.200	0.059
-3	-2	-1	0	1	2	3	4	5	6	7
-0.060	-0.249	-0.350	-0.450	-0.458	-0.386	-0.292	-0.236	-0.254	-0.295	-0.335
8	9	10	11	12	13	14				
-0.405	-0.421	-0.406	-0.367	-0.273	-0.085	0.062				

Figure 112 Cross-correlation unmet health care needs and PRR vote share Poland.

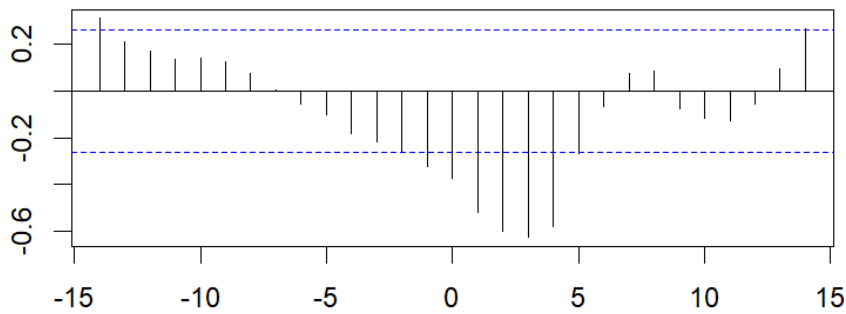
CCF POL PHS high income and Vote Share



-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4
-0.337	-0.317	-0.277	-0.276	-0.271	-0.203	-0.127	-0.050	0.015	0.100	0.133
-3	-2	-1	0	1	2	3	4	5	6	7
0.214	0.281	0.409	0.499	0.637	0.710	0.694	0.652	0.500	0.308	0.196
8	9	10	11	12	13	14				
0.136	0.124	0.116	0.055	-0.015	-0.131	-0.198				

Figure 113 Cross-correlation PHS high income group and PRR vote share Poland.

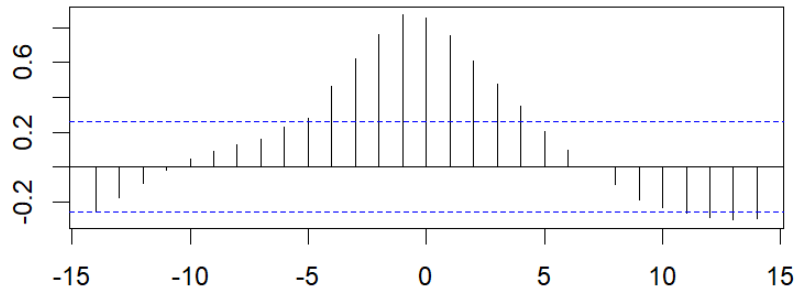
CCF POL PHS low income and Vote Share



-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4
0.311	0.212	0.171	0.134	0.139	0.126	0.074	0.006	-0.057	-0.099	-0.181
-3	-2	-1	0	1	2	3	4	5	6	7
-0.217	-0.264	-0.321	-0.371	-0.519	-0.601	-0.625	-0.580	-0.266	-0.065	0.076
8	9	10	11	12	13	14				
0.083	-0.078	-0.115	-0.126	-0.055	0.097	0.265				

Figure 114 Cross-correlation PHS low income group and PRR vote share Poland.

CCF POL Education and Vote Share



-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4
-0.259	-0.175	-0.094	-0.019	0.047	0.092	0.131	0.163	0.227	0.282	0.461
-3	-2	-1	0	1	2	3	4	5	6	7
0.624	0.763	0.875	0.856	0.753	0.608	0.477	0.352	0.206	0.098	-0.001
8	9	10	11	12	13	14				
-0.097	-0.187	-0.232	-0.267	-0.289	-0.304	-0.297				

Figure 115 *Cross-correlation education and PRR vote share Poland.*

Appendix 9 – Use of Artificial Intelligence (ChatGPT)

Artificial intelligence has been utilised for three purposes in this thesis, the first one being language correction and the second one being rephrasing texts from journals that I did not understand and, thirdly, to assist with generating codes and solving errors in R studio. An example of a chat can be found [here](#).

1. **Language correction:** ChatGPT has corrected sentences which could use some improvement, but I could not come up with the right words or structure. I did not use the tool to improve entire paragraphs, just sentences. In this way, I had a better overview of the correctness of the text and my own language use would still be dominant throughout the thesis. In table, some examples of input (my own text) and output (ChatGPT’s text) are presented.

	Input	Output
Text 1	Can you rephrase: For Europe, the study agrees with Schaff & Pontusson (2024) in the sense that economic decline of regions in the main factor explaining the rise of PRR. PRR was most popular in regions where growth in GDP per capita stagnated and immigration was relatively high.	For Europe, the study aligns with Schaff and Pontusson (2024) in highlighting regional economic decline as the primary driver behind the rise of PRR. The popularity of PRR was highest in areas where GDP per capita growth had stagnated and immigration levels were relatively high.
Text 2	Thus, among those without economic insecurity, institutional trust has a stronger impact on populist voting compared to those experiencing high economic insecurity. For individuals with the highest levels of economic insecurity, institutional trust had no significant influence on their voting behavior.	Thus, among those without economic insecurity, institutional trust has a stronger impact on populist voting compared to those experiencing high economic insecurity. For individuals with the highest levels of economic insecurity, institutional trust had no significant influence on their voting behaviour.

Table 14 Examples of language correction use of ChatGPT.

2. **Assistance codes and errors R Studio:** For all the codes needed for data cleaning and analysis, I tried to make my own codes based on websites that gave examples of similar analyses. In some cases, I did not manage to create the right code or some errors occurred. Rather than waiting for the next meeting with my supervisor, I tried to solve the problems with ChatGPT’s help. In most cases, this was extremely helpful. Some examples of chats on this topic can be found [here](#) and [here](#).