

SHAPING FARM WORKERS' POLITICAL TRUST: THE MODERATING ROLE OF MISINFORMATION EXPOSURE

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Abstract

Political trust is an important indicator for evaluating relations between politicians and stakeholders. In agriculture, political trust has not been researched in depth, although agriculture is highly regulated by policies related to access to resources. This paper addresses this knowledge gap by answering the question of the role of institutionalized and non-institutionalized social communication in shaping farm workers' political trust. The multiple regression on a sample of 1,016 farm workers from the Europe-wide 2020 European Social Survey yields new insights. A key finding is the moderating effect of the opinion that online communication channels expose people to misinformation on the relationship between farm workers' trust in politics as a dependent variable and frequency of social contacts, time spent monitoring politics and current affairs, and membership in professional associations. In addition, political trust was found to increase as farm workers' interest in politics and monitoring news about politics and current affairs increased. While political trust is positively associated with farm workers' institutionalized participation in professional associations, it is negatively associated with non-institutionalized networking. Confirmation bias associated with farm workers' networking is particularly risky. Another important finding is lower political trust among households with a subjectively worse financial situation.

Implications for Central European audience: Government, formal networks (professional associations), and informal networks (social networks) provide verified and trustworthy information. At the same time, farmers themselves should have sufficient information literacy to critically assess the credibility of the information. The farm worker's education plays an important role and is significantly related to most of the main effects. The study's conclusions also include suggestions for follow-up research.

Keywords: political trust; entrepreneurs; agriculture; social communication; misinformation; farm workers

JEL Classification: J43, D83

Introduction

Agriculture in the European Union (EU) has long been heavily influenced by the strategy and instruments of the EU's Common Agricultural Policy. Farmers see subsidies and support as useful and stabilizing elements, but subject to certain rules (Vrolijk & Poppe, 2020). The rules are the result of a political consensus. Most subsidies and other kinds of support are provided from EU funds, and national sources are used to co-finance or finance national subsidy programs. In addition, agriculture is heavily regulated through policy interventions, for example, to minimize environmental impact (Mikhno et al., 2021; Papadopoulos et al., 2015; Tahal & Formanek, 2022). Farmers' views of policy can be diverse and multifaceted and are influenced by personal experiences, cultural context, socioeconomic factors, and historical relationships between farmers and government.

In its broadest sense, political trust refers to citizens' evaluations of underlying political institutions and includes assessments of the key attributes that make any political institution or political actor credible, such as trustworthiness, fairness, competence, transparency in policymaking, and openness to competing views. (Zmerli, 2014). A succinct definition of trust in politics states that *"Trust...reflects evaluations of whether or not political authorities and institutions are performing in accordance with normative expectations held by the public. Citizen expectations of how government should operate include, among other criteria, that it be fair, equitable, honest, efficient, and responsive to society's needs. In brief, an expression of trust in government (or synonymously political confidence and support) is a summary judgment that the system is responsive and will do what is right even in the absence of constant scrutiny"* (Miller & Listhaug, 1990). This definition is consistent with the definition of political trust in our study, in which political trust consists of trust in politicians, political parties, a country's parliament, a country's government, and supranational political institutions (European Parliament, United Nations).

Farmers' political trust can be affected by several aspects. First, agricultural policies implemented by governments can have a significant impact on farmers' political trust. If agricultural policies are perceived as beneficial, supportive, and responsive to farmers' needs, this can increase trust. For example, policies that provide subsidies, price support, or assistance during natural disasters increase trust (Alkon & Urpelainen, 2018). Farmers often rely on government institutions to access resources such as credit, agricultural inputs, infrastructure development, and market opportunities. If these services are delivered efficiently and meet farmers' needs, this can contribute to trust in policy (López-Felices et al., 2023). Farmers may have more political trust if they feel that they are adequately represented and that their interests are taken into account in policymaking. Strong farmer organizations or associations can play a role in amplifying farmer voices and influencing policy, which in turn affects trust (Ellis, 2020). Last but not least, consistent policy implementation and policy stability are essential for building farmers' political trust (Valaskova et al., 2022). Frequent policy changes, uncertainty, or lack of long-term planning can undermine trust and generate scepticism.

In this paper, we focus on the agricultural labour force, i.e., not only on the entrepreneurial farmers (managing owners) and their family members working on a farm, but also on the paid labour force, which is the dominant labour input in medium and large farms. The term "farm workers" is used to define the objects of research. Moreover, in medium and large

farms, a significant part of decision making is delegated to paid managers. Therefore, the study also distinguishes the status of the worker, whether he or she is an entrepreneur (managing owner) or a paid employee.

The aim of this paper is to identify selected factors that influence farm workers' trust in political institutions and their regulations in Europe (we work with the concept of "political trust"). The model developed has descriptive rather than predictive ambitions. The research will provide a better understanding of farmworkers' attitudes toward policies, which are an important institutional framework of the agricultural sector.

The following section explains the selection of variables for the model in the context of the research questions and hypotheses based on the literature review. The methodology section presents the data sources used and the quantitative methods employed to test the hypotheses. The results and discussion provide insight into the key findings and their interpretation in light of current knowledge and context. The conclusions provide a summary of key findings, recommendations, research limitations, and suggestions for further research in this area.

1 Literature review

1.1 Political trust

Measuring political trust is a complex task in the social sciences, and researchers have developed various methods and approaches to assess individuals' attitudes toward political institutions and actors, such as surveys and questionnaires, trust indexes and scales, experimental methods, content analysis or qualitative interviews. This study uses a survey and questionnaire. Previous research studies applied self-reporting way. Respondents were asked to rate their level of trust in different levels of governments using a single question (Wei & Lu, 2023; Xu et al., 2022) or scales (Schneider, 2017; Schoon & Cheng, 2011; Ugur-Cinar et al., 2020).

1.2 Farmers' interest in politics

Farm workers' livelihoods and well-being are often directly affected by policy decisions and actions (Alkon & Urpelainen, 2018). Their trust in politics is based on the perception that policies can significantly affect their working conditions, wages, access to health care, labour rights, immigration policies, and environmental regulations. A higher interest in politics may be due to a desire to be informed about policy changes and to actively participate in shaping decisions that directly affect their lives (Hu et al., 2023). In addition, farm workers may see politics as a means of asserting their rights and interests. If they feel that political institutions truly represent their interests, their interest in politics and their trust in political institutions is likely to be greater (Gabriel, 2017).

H1: The level of interest in politics is related to farm workers' political trust.

1.3 Social communication

Social communication is defined as the sharing of information, thoughts, or ideas with another person (Mundy et al., 1986). In recent years, digital social communication in particular has become a popular way of social communication (Chakraborty & Biswal,

2023). This paper focuses on different ways of farm workers' social communication – social networks, the Internet, and professional organizations – taking into account the frequency of social contacts.

Digital social communication, including the influence of mass media, social networks, and consulting services, can play an important role in shaping farm workers' political trust. Mass media, including television, radio, newspapers, and online news platforms, can influence farm workers' political trust through the information they provide. Media coverage of policy events, policies, and debates can shape farm workers' perceptions of political actors and institutions (Xu et al., 2022). Balanced and unbiased coverage can help build trust, while bias, misinformation, or sensationalism can undermine trust (Ferreira & Borges, 2020). Trust levels can also be influenced by the way the media portrays agricultural issues and highlights farm workers' concerns and needs (Specht & Rutherford, 2013).

Social networks also can play a role in shaping farm workers' political trust. Interactions with peers, community members, and other farmers can influence their perceptions of political actors and institutions (Neogi et al., 2021). Farm workers often rely on social networks to share experiences, exchange information, and discuss policy issues (Ofori & El-Gayar, 2021). Positive experiences and trust-building interactions within these networks can strengthen farm workers' political trust, while negative experiences or perceptions of corruption or inefficiency can weaken trust (Ambali & Begho, 2021).

The use of the Internet can play an important role in shaping farm workers' political trust. The Internet provides farmers with access to a wealth of information about policy issues, policies, and the activities of policy actors (J. Lu et al., 2019). Access to diverse information helps farm workers develop a more comprehensive understanding of policy processes and make informed judgments. It enables them to critically evaluate different perspectives and promotes their sense of independence in judging the credibility of political actors and institutions (Thomas et al., 2004). The Internet has increased the transparency of political processes by facilitating public access to information. Farmers have access to government reports, legislative documents, and policy proposals, allowing them to question policy decisions and actions (Hirzalla et al., 2011). Transparency in policy increases trust by reducing opacity, increasing accountability, and allowing farmers to more closely follow the actions of policy actors (Zhou et al., 2020).

H2: The extent of internet use is related to farm workers' political trust.

H3: Time spent gathering news about politics and current affairs, watching, reading or listening, is related to farm workers' political trust.

It is important to note that the use of the Internet and social media also poses a problem in terms of information overload, the spread of misinformation, and the creation of filter bubbles in which individuals are exposed only to information that matches their existing beliefs (H. Lu et al., 2020). These issues potentially affect farm workers' political trust when they are exposed to unreliable or biased information (Wei & Lu, 2023). Critical digital literacy and the ability to verify information sources are key to farm workers' effective navigation of the online environment (Gautam et al., 2022).

H4: The belief that online communication channels expose people to misinformation is related to farm workers' political trust.

The frequency of social contacts may influence farm workers' political trust in several ways. Social contacts provide opportunities to exchange information and discuss political issues and institutions. Conversations and information sharing can contribute to a better understanding of political dynamics, increase awareness of policies and government practices, and promote trust-building through the exchange of information and ideas. Social contacts shape social norms and influence individuals' attitudes and behaviours, including trust in political institutions (Huszák & Gittins, 2022). The frequency of social contact helps reinforce or challenge existing norms and attitudes toward political institutions. Regular social contacts provide social support and facilitate collective action (Junquera et al., 2022). Farmers who have a strong social network and maintain frequent social contacts are more likely to engage in collective action, such as joining farmer organizations, lobbying, or participating in community-level policy discussions (Svendsen, 2011).

H5: The frequency of social contacts is related to farm workers' political trust.

Farm workers also communicate through their professional organizations. Farmers' associations often serve as collective representatives of farmers' interests. By joining these organizations, farmers feel that their interests and concerns are more effectively represented through collective action, bargaining and lobbying (Hellin et al., 2009). This sense of collective representation can lead to greater trust in the political system because farmers believe their voices will be heard and considered. Membership in professional associations allows farmers to participate in policy-making processes (Bizikova et al., 2020). When farm workers see tangible results from their involvement in the organization, it can increase their trust in the political system. Finally, professional associations often provide valuable information, education, and support to their members (Bachke, 2019). By joining these organizations, farm workers gain access to knowledge and resources that can improve their livelihoods. This increased awareness and empowerment contribute to greater trust in the political system (Hooghe & Marien, 2013).

H6: Farm workers' membership in professional associations or similar organizations is related to their political trust.

Control variables

The control variables were selected from available and common respondents' socioeconomic characteristics in agriculture research – age, gender, farm size, level and diversification of household income, education, and work status. Membership in a political party was also added because it likely shapes farm workers' trust in politics.

2 Methods

2.1 Data collection

The research is based on secondary data from individual respondents in the 2020 European Social Survey. The European Social Survey (ESS) is an academic-led international survey that has been conducted across Europe since its inception in 2001. Face-to-face interviews are conducted every two years with newly selected cross-sectional samples. The survey measures the attitudes, opinions, and behaviours of various population groups in more than thirty countries (ESS, 2023). For each question,

respondents were given the option of refusing to answer or indicating that they did not know the answer.

Respondents were selected if they worked in the sector NACE "Crop and animal production, hunting and related service activities". Not all respondents answered all questions included in this analysis. They had the option of refusing to answer, not answering at all, or indicating that they did not know. Thus, the final sample for modelling is 1,016 respondents with completed opinions. Of the total number of respondents, 55.9% had the status of an employee, 32.8% had the status of a sole holder (entrepreneur), and 11.3% had the status of a worker in their own family business. Respondents from 19 European countries are represented (Bulgaria, Czech Republic, Estonia, Finland, France, Greece, Croatia, Hungary, Switzerland, Iceland, Italy, Lithuania, Montenegro, Northern Macedonia, Netherlands, Norway, Portugal, Slovakia, Slovenia). The coverage of most European countries allows the generalizability of the results throughout Europe.

2.2 Variable definition

Dependent variable: political trust (mean score)

Farm workers' political trust cannot be measured with a single question (Levi & Stoker, 2000). The methodology of ESS includes a series of questions about respondents' trust in institutions. Perceptions of trust in political institutions such as government, parliament, and political parties tend to differ from trust in regional and local political institutions, trust in protective institutions such as the armed forces and police, and trust in regulatory institutions such as courts and police (Schneider, 2017). This study focuses exclusively on trust in politicians and political institutions of national and international importance. This approach is close to Schneider's concept of political trust Model 1 which considers trust in government, trust in parliament, trust in political parties, trust in regional government and trust in local government (Schneider, 2017). In this research, the respondents were asked to rate their level of trust in the following institutions and political actors.

- Trust in the country's parliament.
- Trust in national government.
- Trust in politicians.
- Trust in political parties.
- Trust in the European Parliament.
- Trust in the United Nations.

The questions have a response scale from 0 = "No trust at all" ("Extremely dissatisfied" in the case of the last question) to 10 "Complete trust" ("Extremely satisfied" in the case of the last question).

The results show the internal consistency of the set of questions about political trust (Cronbach's $\alpha = 0.903$, McDonald's $\omega = 0.900$), which allows to calculation of the average value for each respondent, so the nature of the dependent variable is rather continuous. Computing the index (mean) from the set of questions allows including one

composite latent variable "Political trust" in the regression model, consisting of the six above-mentioned manifest variables.

Explanatory variable: interest in politics

Interest in politics is assessed with the scaled question "How are you interested in politics?" with options 1 = Not at all interested, 2 = Hardly interested, 3 = Quite interested, 4 = Very interested.

Explanatory variable: extent of internet use

The extent of internet use is assessed with the scaled question "How often do you use internet?" with options 1 = Never, 2 = Only occasionally, 3 = A few times a week, 4 = Most days, 5 = Every day.

Explanatory variable: time spent gathering news about politics and current affairs, watching, reading or listening

Time spent gathering news about politics and current affairs is measured by the declared answer to the question "How much time do you spend monitoring news about politics and current affairs, watching, reading or listening, in minutes per day?"

Explanatory variable: the belief that online communication channels expose people to misinformation

Workers' opinion that online communication channels expose people to misinformation was rated on a scale from 0 = "Not at all" to 10 = "Completely".

Explanatory variable: frequency of social contacts

The frequency of social contact among workers was measured by the question "How often do you socially meet with friends, relatives or colleagues?" on a scale of 1 = Never, 2 = Less than once a month, 3 = Once a month, 4 = Several times a month, 5 = Once a week, 6 = Several times a week, 7 = Every day.

Explanatory variable: membership in professional associations or similar organizations

Current declared membership in a professional association is coded 1. If the worker has never been a member or has already terminated membership, it is coded 0.

Control variables:

- *Age*: Calculated age of the respondent.
- *Gender*: ESS tracks categories 1 = Male, 2 = Female.
- *Work status*: 1 = Employee, 2 = Self-employed, 3 = Working for own family business, 4 = Not applicable.
- *Education*: Given the differences in education systems across European countries, educational attainment in this study was assessed by the number of years of full-time education completed in educational institutions.

- *The size of the farm the respondent manages or works on it:* The number of workers better illustrates the size of the farm because using labour intensity makes it possible to standardize the reporting of agricultural area, the number of animals kept, total production, and the different labour intensities of crop and livestock production. The ESS tracks the categories 1 = less than 10 employees, 2 = 10 to 24 employees, 3 = 25 to 99 employees, 4 = 100 to 499 employees, 5 = 500 or more employees. Given the small number of observations in category 5, categories 4 and 5 were combined into a common category 4 = 100 or more employees.
- *Household income level:* Subjective assessment of the household's income situation ("Feeling about household's income nowadays") on a scale of 1 = "Living comfortably on present income", 2 = "Coping on present income", 3 = "Difficult on present income", 4 = "Very difficult on present income".
- *Main source of household income:* The variable assesses whether the main source of household income comes from agricultural production (1) or another source (0).
- *Membership in a political party:* 0 = No, 1 = Yes.

Table 1 describes the distribution of all variables in the model. The distribution of respondents by age does not match the situation in the EU. As shown in the 2016 Labor Force Survey (Eurostat, 2020), 31.8% of the agricultural labour force in the EU-28 was under 40 years old (15.2% in the sample). 59.2% of those working in agriculture were aged 40-64 (34.5% in the sample). 9.0% were 64+ years old (50.3% of the sample). Therefore, post-stratification weights were used, corresponding to the age structure of farmers in the EU.

The gender distribution of respondents is similar to the situation in the EU, where 35.1% of agricultural workers are women (36.9% in the weighted sample).

Table 1 | Characteristics of variables (weighted, N = 1,016)

Variable	Symbol Type	Distribution
Dependent variable		
<i>Political trust (T)</i>	y scale	Mean = 4.0784; Std. Deviation = 2.16987; Minimum = 0; Maximum = 10
Explanatory variables		
<i>Interest in politics (E1)</i>	x ₁ ordinal	Not at all interested = 27 %; Hardly interested = 38.7 %; Quite interested = 27.7 %; Very interested = 6.5 % Mean = 2.14; Std. Deviation = 0.888; Minimum = 1; Maximum = 4
<i>Extent of internet use (E2)</i>	x ₂ ordinal	Never = 20.9 %, Only occasionally = 7.6 %, A few times a week = 6.8 %, Most days = 12.2 %; Every day = 52.6 % Mean = 3.68; Std. Deviation = 1.636; Minimum = 1; Maximum = 5
<i>Time spent gathering news about politics, minutes (E3)</i>	x ₃ scale	Mean = 80.25; Std. Deviation = 104.949; Minimum = 0; Maximum = 1175
<i>Online communication channels expose people to</i>	x ₄ ordinal	0 (1.8 %), 1 (0.6 %), 2 (2.6 %), 3 (3.6 %), 4 (5.1 %), 5 (14.5 %), 6 (10.4 %), 7 (14.9 %), 8 (18.5 %), 9 (13.9 %), 10 (14.1) Mean = 6.9; Std. Deviation = 2.339; Minimum = 0; Maximum = 10

<i>misinformation (E4)</i>		
<i>Frequency of social contacts (E5)</i>	x ₅ <i>ordinal</i>	Never = 1.9 %; Less than once a month = 12.9 %; Once a month = 10 %; Several times a month = 24.5 %; Once a week = 13.6 %; Several times a week = 22.6 %; Every day = 14.4 % Mean = 4.61; Std. Deviation = 1.662; Minimum = 1; Maximum = 7
<i>Membership of a professional association (E6)</i>	x ₆ <i>nominal</i>	Yes = 7%; No = 93%
Control variables		
<i>Age, years (C1)</i>	x ₇ <i>scale</i>	Mean = 48.01; Std. Deviation = 15.436; Minimum = 16; Maximum = 90
<i>Gender (C2)</i>	x ₈ <i>nominal</i>	Male = 63.1 %; Female = 36.9 % The Female category enters the model as a dummy variable, but a two-sample t-test showed no association with trust in political institutions (t = 0.489; p = 0.625).
<i>Work status (C3)</i>	x ₉ <i>nominal</i>	Employee = 51.4 %, Self-employed = 35.5 %, Working for own family business = 13.1 % The category "Working for own family business" enters the model because according to ANOVA (F = 5.182, p = 0.006) and Tukey's HSD test, this category is significantly different from the other two categories in terms of trust in political institutions).
<i>Education, years (C4)</i>	x ₁₀ <i>scale</i>	Mean = 11.38; Std. Deviation = 3.358; Minimum = 5; Maximum = 40
<i>Farm size (C5)</i>	x ₁₁ <i>ordinal</i>	Under 10 employees (1) = 66.1 %; 10 to 24 (2) = 15.4 %; 25 to 99 (3) = 12.7 %; 100 or more employees (4) = 5.8 % ANOVA showed no significant relationship with trust in political institutions (F = 0.621; p = 0.601).
<i>Subjective opinion about household income level (C6)</i>	x ₁₂ <i>ordinal</i>	Living comfortably on present income = 17.9 %; Coping on present income = 46.3 %; Difficult on present income = 27.8 %; Very difficult on present income = 8.1 % Mean = 2.26; Std. Deviation = 0.844; Minimum = 1; Maximum = 4 ANOVA and linearity test (F = 76.211; p < 0.001; R = -0.244) showed a significant inverse relationship with trust in political institutions.
<i>Main source of income (C7)</i>	x ₁₃ <i>nominal</i>	Income from farming = 28.8 %, Off-farm income = 71.2 % A two-sample t-test showed no association with trust in political institutions (t = -1.485; p = 0.138).
<i>Membership in a political party (C8)</i>	x ₁₄ <i>nominal</i>	0 = No (59.4 %), 1 = Yes (40.6 %)

Source: own processing

The dependent variable “political trust” was assessed using a set of manifest variables rather than a single question because political trust has several dimensions (Levi & Stoker, 2000). The reliability of the set of questions on farm workers' trust in politics was assessed using Cronbach's alpha and McDonald's omega, as there is no clear preference for either indicator in the recent literature (Hayes & Coutts, 2020).

Hierarchical multiple linear regression was chosen to test the hypotheses. Hierarchical multiple regression is a statistical technique used to examine the relationship between a dependent variable and multiple independent variables while controlling for the effects of other variables. The principle of hierarchical multiple regression is to examine the unique contribution of each independent variable to the prediction of the dependent variable, after accounting for the effects of the other variables (Stam & Elfring, 2008). Hierarchical

regression analysis is a common approach in social sciences and allows for a comparison between alternative models with and without interaction terms, where an interaction effect exists only if the interaction term contributes significantly to the variance explained in the response variable over and above the main effects of the explanatory variables (Veidal & Flaten, 2014).

The analysis is done stepwise, with the independent variables inserted into the regression equation in a specific order or hierarchy based on theoretical or practical considerations. The independent variables are usually grouped into blocks or stages, and each block is included in the analysis sequentially. The first block is often referred to as the control variables or covariates. In subsequent steps, additional blocks of independent variables are added to the regression equation. These blocks usually consist of variables that are of primary interest in the analysis (main effects) or represent specific theoretical constructs (Ross & Willson, 2017).

$$Y = \beta_0 + \beta_1 X_{11} + \beta_2 X_{22} + \dots + \beta_k X_{kk} + \varepsilon, \text{ where} \quad (1)$$

Y represents the dependent variable, β_0 represents the intercept, $\beta_1, \beta_2, \dots, \beta_k$ represent the estimated regression coefficients for each independent variable, X_1, X_2, \dots, X_k represent the independent variables, ε represents the residual or error term. In hierarchical regression, predictor variables are added to the equation in a stepwise manner. This allows for the examination of the unique contribution of each predictor variable while controlling for the effects of previously entered variables.

Four models were created and compared. Model 1 contains only control variables. Model 2 extends Model 1 to include main effects. Model 3 extends Model 2 to include interactions among the main effects to reveal moderating variables. This approach is consistent with previous research articles (Kellermanns et al., 2012; Stam & Elfring, 2008; Veidal & Flaten, 2014). Model 4 includes only significant main effects and interactions while controlling for all control variables.

Model 1 = control variables (C1 to C8)

Model 2 = control variables (C1 to C8) + main effects (E1 to E6)

Model 3 = control variables (C1 to C8) + main effects (E1 to E6) + two-way interactions of main effects

Model 4 = control variables (C1 to C8) + significant main effects and interactions

For continuous independent variables (E3, C1, C4), the relationship between the dependent variable and the quadratic of the independent variables was also examined to detect possible nonlinearity.

The final Model 4 was subjected to diagnostic tests to verify the assumptions of the regression model (Fox, 2019). A random error term is normally distributed (visual assessment using histogram and normal curve), homoscedasticity (White's test, residual plot), errors are independent (regression between squared residuals and independent

variables, ANOVA), absence of influential observations (Cook's distance), absence of multicollinearity (VIF, Variance Inflation Factor).

3 Results

Table 2 shows the correlation coefficients between the variables to reveal potentially related variables.

Table 2 | The correlation coefficients between the variables

	(Y)	(E1)	(E2)	(E3)	(E4)	(E5)	(E6)	(C1)	(C2)	(C3)	(C4)	(C5)	(C6)	(C7)	(C8)
(Y)	1														
(E1)	0.298 **	1													
(E2)	0.118 **	0.174 **	1												
(E3)	0.069 **	0.167 **	-0.107 **	1											
(E4)	-0.041 **	0.003 **	-0.006 **	-0.027 **	1										
(E5)	-0.002 **	0.064* **	0.205 **	-0.085 **	-0.012 **	1									
(E6)	0.164 **	0.199 **	0.148 **	0.029 **	-0.003 **	-0.002 **	1								
(C1)	-0.067 *	0.020 **	-0.492 **	0.202 **	-0.040 **	-0.247 **	0.046 **	1							
(C2)	-0.014 **	-0.177 **	0.005 **	0.023 **	-0.022 **	-0.062 **	-0.041 **	0.072 **	1						
(C3)	0.084 **	0.030 **	-0.018 **	0.030 **	-0.112 **	0.050 **	-0.011 **	-0.053 **	0.030 **	1					
(C4)	0.151 **	0.164 **	0.429 **	-0.076 **	0.056 **	0.122 **	0.157 **	-0.356 **	0.029 **	0.006 **	1				
(C5)	0.005 **	-0.062 **	0.025 **	-0.011 **	0.042 **	-0.033 **	0.003 **	0.033 **	0.149 **	-0.224 **	0.074 **	1			
(C6)	-0.244 **	-0.103 **	-0.281 **	0.067 **	-0.014 **	-0.135 **	-0.102 **	0.242 **	-0.006 **	-0.137 **	-0.332 **	-0.005 **	1		
(C7)	0.041 **	0.058 **	0.067 **	-0.010 **	0.048 **	-0.055 **	0.057 **	-0.034 **	-0.122 **	0.156 **	0.028 **	-0.316 **	-0.048 **	1	
(C8)	0.168 **	0.370 **	0.014 **	0.081 **	-0.015 **	0.056 **	0.134 **	0.059 **	-0.109 **	0.027 **	0.034 **	-0.069 **	-0.040 **	0.066 **	1

Note 1: **. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).

Note 2: (Y) Political trust; (E1) Interest in politics; (E2) Extent of internet use; (E3) Time spent gathering news about politics, minutes; (E4) Online communication channels expose people to misinformation; (E5) Frequency of social contacts; (E6) Membership in a professional association; (C1) Age; (C2) Gender (Female); (C3) Work status (Working for own family business); (C4) Education; (C5) Farm size; (C6) Subjective opinion about household's income nowadays; (C7) Income from farming; (C8) Membership in a political party.

Source: own processing

A statistically significant relationship at the 0.05 significance level was found between the dependent variable (political trust), farm workers' interest in politics, extent of internet use, time spent gathering information about politics, membership in a professional association, age, working for own family business, level of education, subjective opinion about household income level, and membership in a political party. Significant relationships were also found among the explanatory variables; however, collinearity is tested in regression analysis using the Variance Inflation Factor (VIF, Table 5).

For continuous variables (T, E3, C1, C4), the relationship between the dependent variable (T) and the square of the independent variables ($E3^2$, $C1^2$, $C4^2$; Table 3) was also examined. Nonlinear quadratic effects were not detected, and neither the tightness of the relationship nor the statistical significance increased.

Table 3 | Detection of non-linear effects

	Y	E3	E3'E3	C1	C1'C1	C4	C4'C4
Y	1						
E3	0.069*	1					
E3'E3	0.047	0.882**	1				
C1	-0.067*	0.202**	0.088**	1			
C1'C1	-0.051	0.205**	0.103**	0.980**	1		
C4	0.151**	-0.076**	-0.053	-0.356**	-0.379**	1	
C4'C4	0.152**	-0.075*	-0.048	-0.302**	-0.315**	0.963**	1

Note: **. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).

Source: own processing

Table 4 describes the results of the regression analysis of the four models. Model 1 assesses only the dependence of political trust on control variables. Political trust is related to the education level, subjective opinion about household income and membership in the political party. Political trust is higher among farm workers who have higher education, have an optimistic opinion about household income, and are members of political parties.

Model 2 includes the main effects and control variables. Within the control variables, education becomes less important, as this variable is significantly associated with most of the main effects. Farm workers with higher education are more interested in politics, more likely to use the Internet, spend more time getting information about politics and current issues, have more frequent social contacts, and are more likely to be members of a professional associations.

In Model 2, the statistically significant main effects related to farm workers' political trust are level of interest in politics, time spent getting information about politics, frequency of social contacts, and membership in a professional association.

Model 3 is a full model that includes all main effects, main effect interactions, and control variables. It is evident that after adding the main effect interactions, the significance of each main effect decreases, indicating the moderators.

Model 4 contains statistically significant main effects and their interactions when all control variables are included.

Table 4 | Results of Hierarchical Regression Analyses

	Model 1	Model 2	Model 3	Model 4 (final)
<i>Controls</i>				
(C1) Age	0.011	-0.057	-0.066	-0.062
(C2) Sex (Female)	0.038	0.074*	0.080*	0.074*
(C3) Working for own family business	0.051	0.029	0.037	0.030
(C4) Education	0.076*	0.017	0.016	0.017
(C5) Farm size	0.012	0.012	0.010	0.012
(C6) Opinion about household income	-0.203**	-0.203**	-0.202**	-0.205**
(C7) Income from farming	0.012	0.007	0.006	0.009
(C8) Membership in particular political party	0.148**	0.050	0.053	0.049
<i>Main effects</i>				
(E1) How interested in politics		0.243**	0.055	0.243**
(E2) Internet use, how often		0.004	0.074	
(E3) News about politics and current affairs		0.086**	-0.145	
(E4) Online communication and misinformation		-0.046	-0.118	
(E5) Frequency of social contacts		-0.073*	0.091	
(E6) Membership in a professional organisation		0.086**	0.216	
<i>Two-way interactions of main effects</i>				
E1*E2			0.045	
E1*E3			0.060	
E1*E4			0.124	
E1*E5			0.091	
E1*E6			-0.106	
E2*E3			0.007	
E2*E4			0.080	
E2*E5			-0.236**	
E2*E6			-0.019	
E3*E4			0.187	0.106**
E3*E5			0.021	
E3*E6			-0.045	
E4*E5			-0.145	-0.112**
E4*E6			0.014	0.092**
E5*E6			0.004	
R ²	0.087	0.166	0.180	0.171
Adjusted R ²	0.080	0.155	0.156	0.161
ΔR ²	0.080	0.079	0.014	-0.009
F	11.839	14.034	7.339	16.970
n	1016	1016	1016	1016

Note: ^aStandardized coefficients are reported; * $p < 0.05$, ** $p < 0.01$

Source: own processing

Model 4 in the Table 4 shows that the main effects are related to farm workers' political trust only in the interactions. The only independent main effect related to political trust is farm workers' interest in politics (variable *E1*, $\beta = 0.243$, $t = 7.383$, $p < 0.001$). Workers with higher interest in politics have higher political trust.

A direct relationship was found between political trust and the concurrent effect (interaction) of time spent monitoring politics and current affairs and the belief that online communication channels expose people to misinformation (interaction $E3^*E4$, $\beta = 0.106$, $t = 3.315$, $p < 0.001$).

An inverse relationship was found between farm workers' political trust and the concurrent effect (interaction) of frequency of social contact and the belief that online communication channels expose people to misinformation (interaction $E4^*E5$, $\beta = -0.112$, $t = -3.702$, $p < 0.001$). A higher frequency of social contact reduces farm workers' political trust despite more critical attitudes toward misinformation.

There is a directly proportional relationship between political trust and the interaction between membership in professional associations and the belief that online communication channels expose people to misinformation (interaction $E4^*E6$, $\beta = 0.095$, $t = 3.190$; $p < 0.001$). Farm workers who are members of a professional organization and are aware of the disinformation risk of online social communication have higher political trust.

Among the control variables, gender (women have higher political trust than men; $\beta = 0.074$, $t = 2.435$, $p = 0.015$) and subjective opinion about the level of household income ($\beta = -0.205$, $t = -6.498$, $p < 0.001$) appear to be significant determinants of farm workers' political trust.

The final model 4 was subjected to diagnostic testing (Table 5). The diagnostic tests do not show any problems with the assumptions of the regression analysis.

Table 5 | Model 4 diagnostic tests

Assumption	Evaluation	Results
Random error term is normally distributed with the mean = 0	Visual assessment (Annex 1)	No big discrepancies from the normal curve.
Homoscedasticity	White test, visual assessment (Annex 2)	LM = 14.328 ($p = 0.28$)
Errors are independent	Regression between squared residuals and independent variables (ANOVA)	F = 1.305 ($p = 0.216$)
No influential observations	Cook's distance	Min = 0, Max = 0.02
Absence of multicollinearity	VIF	C1 = 1.283 C2 = 1.092 C3 = 1.101 C4 = 1.275 C5 = 1.187 C6 = 1.178 C7 = 1.137 C8 = 1.197 E1 = 1.289 E3*E4 = 1.141 E4*E5 = 1.079 E4*E6 = 1.085

Source: own processing

4 Discussion

Models 2 and 4 show that *farm workers with higher interest in politics have higher political trust*.

Workers with a greater interest in politics often spend more time and effort studying political issues, policies, and how institutions work (Catterberg, 2006). They are more likely to have access to multiple sources of information and engage in critical analysis, which helps them form informed opinions and judgments. As a result, they have greater political trust because they know that decisions are based on comprehensive information and analysis. Workers with a greater interest in politics are more likely to have a stronger value alignment with particular political parties or ideologies (Hooghe & Marien, 2013). When political institutions and policies align with their beliefs and values, they are more likely to trust those institutions. This alignment can create a sense of ideological affinity and trust that political actors are pursuing goals that they support (Levi & Stoker, 2000).

Model 2 without interactions shows a significant *relationship between farm workers' trust in politics and the amount of time they spend following political and current issues*. The opinion that online communication channels expose people to misinformation moderates this relationship. Farm workers who spend more time following current events and are aware of the disinformation risk of online social communication state higher political trust.

The results of existing research show differences between Web 1.0 and Web 2.0 social media sites, demonstrating that consuming news from information/journalism websites is positively associated with higher political trust while accessing information available on social media is associated with lower political trust (Ceron, 2015). Online communication channels, particularly social media platforms, have become an important source of news and information for many people, including farm workers. However, these platforms are also known for their potential to spread misinformation, rumours, and fake news (Ahmed, 2021). When farm workers rely heavily on online sources without critically evaluating the information they encounter, they may be exposed to a wide range of misinformation. This flood of misinformation can undermine their political trust, as it can be difficult for them to distinguish accurate information from false or misleading content.

When farm workers primarily consume news and information that is consistent with their preexisting views and biases, it may reinforce their views while reducing their engagement with other perspectives. This phenomenon, known as confirmation bias (Crepaz & Arikian, 2021), prevents them from thinking critically and exposes them to the echo chamber of like-minded individuals who reinforce each other's views. This is a cognitive bias that affects the way we perceive and process information. In such cases, the influence of misinformation encountered in these echo chambers further damages their political trust.

On the other hand, farm workers who are aware of the widespread dissemination of misinformation on the Internet and have developed a critical perspective in evaluating information can employ strategies to mitigate its effects. They can actively fact-check, search for reliable sources, and critically analyze the information they encounter on the Internet. In such cases, the relationship between time spent gathering news about policy and political trust continues, albeit with a greater emphasis on the importance of information assessment and critical thinking to offset the potential impact of misinformation.

Model 2 without interactions revealed an *inverse relationship between farm workers' political trust and frequency of social contacts*. More frequent social contacts of farm workers reduce their political trust, consistent with the finding that political trust is negatively associated with non-institutionalized participation (Hooghe & Marien, 2013). This research sheds new light on the relationship by revealing the moderating effect of the opinion that online communication channels expose people to misinformation. This view strengthens the relationship.

More frequent social contact between farm workers can help create strong social ties and shared values in their immediate social environment. However, if these social contacts are primarily people with similar political views and beliefs, they may have limited exposure to other perspectives. In such cases, farm workers have fewer opportunities to engage in discussions or encounters that challenge their existing beliefs or present alternative perspectives. This limited contact reinforces existing biases and reduces political trust as they perceive a lack of other perspectives and information (Crepaz & Arikan, 2021).

Online communication channels can amplify the effects of misinformation in social networks. When farm workers' social contacts also rely on online platforms to share news and information, they may be exposed to more misinformation and polarizing content. Social media algorithms designed to display content based on user's preferences and past engagement may further reinforce existing beliefs and contribute to the formation of echo chambers (Ceron, 2015). In this scenario, exposure to online misinformation in their social circles exacerbates negative effects on farm workers' political trust.

A directly proportional relationship was found *between farm workers' political trust and membership in a professional association*. Membership in a professional association in the agricultural sector replaces membership in a trade union in many countries. Professional associations are a particular form of institutionalized participation. Political trust is positively related to institutionalized participation (Hooghe & Marien, 2013). Higher trust has been found in previous research in countries with a corporatist model of participation (Andretta et al., 2016). Moreover, this research found the strengthening moderating influence of the belief that online communication channels expose people to misinformation.

Professional associations often foster networks and communities where members can share information and engage in discussions. These networks can act as a bulwark against misinformation by providing a platform for members to fact-check, share accurate information, and critically evaluate policy developments. Within these professional networks, there is a collective effort to counter the influence of misinformation that can be spread through online communication channels. As a result, the moderating factor of the belief of online misinformation reinforces the positive relationship between political trust and membership in a professional association.

Furthermore, professional associations often make concerted efforts to combat misinformation and promote accurate information in their sector or industry. By proactively addressing the problem of misinformation, professional associations create an environment that promotes political trust by emphasizing the importance of reliable information and counteracting the negative effects of online misinformation.

An expected finding is the *relationship between farm workers' political trust and their subjective assessment of household income situation*, which confirms previous research (Catterberg, 2006).

Political institutions play an important role in shaping economic policies that affect various sectors, including agriculture. When farm workers observe policies that support their income situation, such as agricultural subsidies, price stabilization measures, or access to credit and markets, it strengthens their political trust. The perception that the political system recognizes and addresses their economic problems contributes to the positive relationship between income situation and trust (Zmerli & Castillo, 2015).

When farm workers have a favourable income situation that includes a stable and sufficient income, it contributes to a sense of economic stability and satisfaction. Economic stability is often associated with higher levels of trust in political institutions and the political system. Financially secure farm workers are more likely to trust that the political system will provide economic opportunities, promote equitable distribution of resources, and support policies that benefit their income situation.

Conclusions

The model developed is an analysis of selected factors affecting farm workers' political trust in Europe. In particular, the study focused on the time spent monitoring information about politics, the extent of Internet use, the opinion on disinformation through online social communication, the frequency of social contacts, and membership in professional associations. The farm workers' education plays an important role and is significantly related to most of the main effects. People with higher education have a greater interest in politics, use the Internet more often, spend more time getting information about politics and current issues, have more frequent social contacts, and are more likely to be members of a professional organization.

The analysis is innovative in several aspects. First, it targets farm workers, who have not been the focus of previous research. In this context, agriculture in Europe, particularly in the European Union, is a highly regulated sector, both in terms of environmental management rules and in terms of subsidy and support rules. Thus, farm workers' political no-confidence determines the extent of pressure and negotiations.

An important finding is the moderating effect of the opinion that online communication channels expose people to misinformation on the relationship between political trust and frequency of social contacts, time spent following current events, and membership in professional organizations. Awareness of the disinformation risk of online social communication reinforces these relationships.

From a practical point of view, it is, therefore, important that the government, formal networks (professional associations), and informal networks (social networks) provide verified and trustworthy information. At the same time, farmers themselves should have sufficient information literacy to critically assess the credibility of the information. Here, there is a risk of confirmation bias, in which individuals tend to seek, interpret, or remember information in a way that confirms their pre-existing beliefs or hypotheses while ignoring or downplaying contradictory evidence. Overcoming confirmation bias requires conscious effort and critical thinking. This includes actively seeking and considering other

perspectives, being open to new information, and objectively evaluating evidence. Engaging in constructive debate and discussion can also help people challenge and refine their own beliefs. Therefore, it is important to encourage open discussion, sharing of experiences, and the search for common ground through formal and informal networks, to increase the information literacy of those working in agriculture, and to improve the official information system for farmers.

The research results also show the need to strengthen agricultural consulting services. Agricultural consulting services play a key role in supporting farmers and disseminating information and knowledge. Policymakers should invest in robust and accessible extension services that meet the diverse needs of farmers at all income levels. By providing targeted support, training, and information to low-income farmers, policymakers can help close the knowledge and resource gap, which can improve their income levels and, in turn, their political trust.

The relationship between political trust and household income is also an important finding. Political trust decreases when the subjective income situation of the household deteriorates. Political trust is not affected by whether agriculture is the predominant source of household income. Thus, when assessing agricultural income levels, it is important to consider the income level of the entire household, which manages income risks by diversifying income into agricultural and off-farm activities, and not just the income situation of an individual. The relationship between political trust and household income levels highlights the need for policymakers to consider income inequality, policy preferences, representation, and social cohesion when formulating agricultural policies and programs to ensure equitable and inclusive outcomes for all farmers.

Limitations of the research and future agenda

The research has its limitations. First, the analysis focuses only on European countries, which tend to be characterized by higher levels of freedom and democracy than regions with authoritarian governments. Therefore, the results are generalizable only to this extent and have corresponding implications. Second, the survey does not cover all European countries (19), but only those covered by the European Social Survey on the topics studied. Therefore, the results may be biased by the opinion of farm workers from the missing countries. On the other hand, the sample covers most European countries. Third, the survey was influenced by the range of questions in the European Social Survey. Therefore, some main effects and control variables could not be included in the model.

Given the literature review and the new evidence, we propose to answer the following questions in a follow-up study. What are the key factors that influence farmers' political trust, such as government responsiveness, policy consistency, or access to resources? How do farmers' perceptions of the effectiveness and fairness of agricultural policies influence their political trust? How does farmers' spatial distribution, such as the urban-rural divide or regional differences, affect their political trust and perceptions of government policies?

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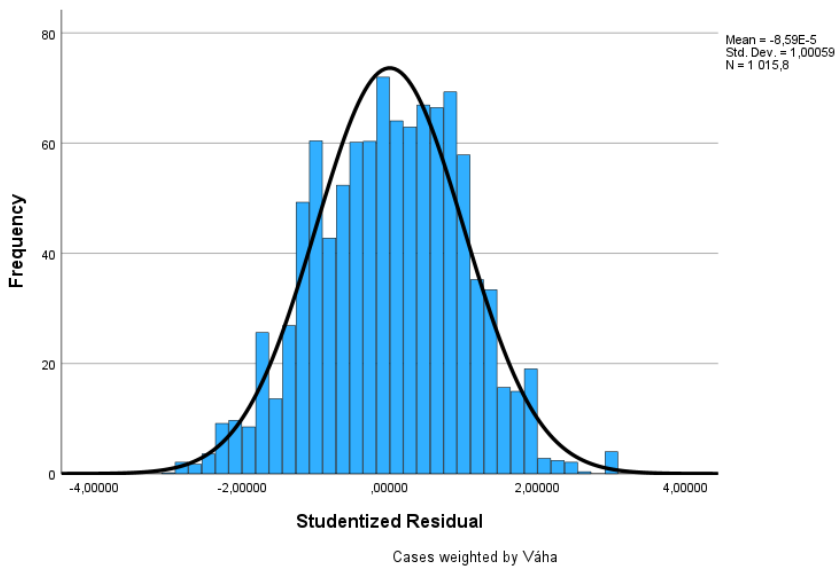
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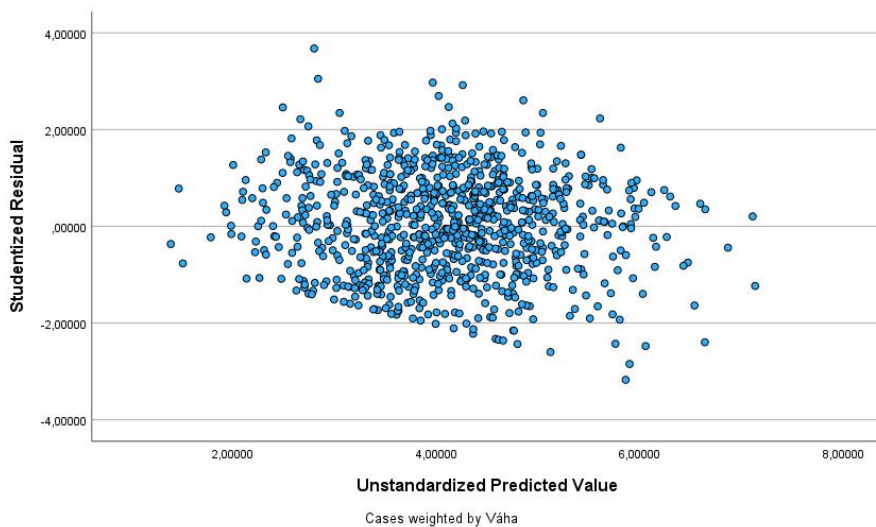
Annexes

Annex 1 | Distribution of random error term



Source: own processing

Annex 2 | Residual plot



Source: own processing