Investigating the Influence of Social Media on Open-Mindedness & Political Bias
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Running head: SOCIAL MEDIA, OPEN-MINDEDNESS & POLITICAL BIAS

## **Submission of Thesis and Dissertation**

# National College of Ireland Research Students Declaration Form (Thesis/Author Declaration Form)

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Degree for which thesis is submitted: <u>Bachelor of Arts Honours Psychology</u>

Title of Thesis: The Influence of Social Media on Open-mindedness &

**Political Bias** 

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# Al Acknowledgement Supplement

# **Psychology**

# The Influence of Social Media on Open-mindedness & Political Bias

Your Name/Student Number	Course	Date
Joseph Flood/21215766	Psychology	13/03/2025

This section is a supplement to the main assignment, to be used if AI was used in any capacity in the creation of your assignment; if you have queries about how to do this, please contact your lecturer. For an example of how to fill these sections out, please click <a href="here">here</a>.

# Al Acknowledgment

This section acknowledges the AI tools that were utilized in the process of completing this assignment.

Tool Name	Brief Description	Link to tool
ChatGPT	ChatGPT is an artificial intelligence (AI) chatbot that uses natural language processing to create humanlike conversational dialogue.	

# Description of AI Usage

This section provides a more detailed description of how the AI tools were used in the assignment. It includes information about the prompts given to the AI tool, the responses received, and how these responses were utilized or modified in the assignment. **One table should be used for each tool used**.

ChatGPT					
Used tool to understand concepts in a simple way					
'Can you explain the gender-gap in relation to political bias as simply as possible'	Sure! The gender gap in political polarization means that men and women tend to support different political parties or ideologies, and this divide has grown over time.  One big reason is that women, on average, tend to support policies related to social welfare, healthcare, and equality more than men. Meanwhile, men, on average, are more likely to prioritize issues like national security, economic policies that favour less government involvement, and personal freedoms.				

Over time, this has made women lean more
toward liberal or left-leaning parties, while men
have leaned more toward conservative or right-
leaning parties. This creates a widening gap ir
political views between the genders

# Evidence of AI Usage

This section includes evidence of significant prompts and responses used or generated through the AI tool. It should provide a clear understanding of the extent to which the AI tool was used in the assignment. Evidence may be attached via screenshots or text.

## Additional Evidence:

[Place evidence here]

## Additional Evidence:

[Place evidence here]

## Acknowledgements

Firstly, I would like to thank my supervisor Dr. Lynn Farrell for the time she has afforded me over the past two semesters, along with the guidance she has provided me throughout the completion of my research thesis. I would also like to thank all of my friends and family for their support throughout the process of working on this project. I would finally like to thank every participant of this project.

#### Abstract

This current project aimed to examine the relationship between social media use, and open-mindedness & political bias. The study examined how time spent on social media, which political content is consumed and which political ideology participants identified with, associate with levels of open-mindedness and political bias. Previous research within the literature on this topic has suggested that an increase in both age and exposure to differing viewpoint on social media leads to an increase in levels of open-mindedness, while also suggesting that both left and right-wing individuals shared comparable levels of political bias. With the wish to expand on this literature, participants (n = 91) completed a set of demographic questions followed by two questionnaires: The Actively Open-minded Thinking Beliefs Scale & The Affective Polarization Scale. Responses were analysed through a standard multiple regression, which revealed that age and exposure to opposing beliefs have a relationship with levels of open-mindedness, while higher political bias levels can be predicted by individuals identifying as ideologically left-wing. These findings have provided a better understanding of both open-mindedness and political bias, and provided important information for policymakers on a key concern in todays society.

*Keywords*: Open-mindedness, political bias, political ideology, time spent on social media, age, political content

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#### Introduction

In recent years the Irish political landscape has shifted. With little to no presence of any extreme opinions in the Irish political sphere over the last few decades, and parties being known as either 'Left', 'Centrist', or 'Right' on the political spectrum (Cannon & Munnelly, 2024), there has recently been an introduction of more radical and violent views. Recent antiimmigration protests inspired by online discourse have turned into attacks on Gardai, and one of the worst riots in modern Irish history (Harrison, 2024). Ireland is not alone in the world with this development as the global political atmosphere has drastically changed in the last decade, especially in European parliaments, where voters have shifted to populist politicians with authoritarian tendencies (Zhuravskaya et al., 2020). One report in Denmark has outlined that there has never been such an urgency for democracies to respond to this rise in extremist views, and that democratic rule in 17 different European countries was eroding (Global State of Democracy Initiative, 2022). Authoritarian regimes may rise by playing a part in manipulating content online, which helps spread misinformation, and influences public opinion and democratic processes (Andriukaitis, 2021). This research aims to shed light on how accountable social media may be for the development of this newfound political polarization and discourse in Irish politics, and how it may affect levels of open-mindedness in the public.

Researchers found that a small amount of 'X' accounts were responsible for a large percentage of activity on the platform in Ireland. It was found that the top 50 active accounts were responsible for 35% of the total content within the misinformation ecosystem and the top 10 active accounts were responsible for 14% of the activity (Gallagher et. al., 2023). Irish politicians were also found to be highly targeted with misinformation by accounts, with former Taoiseach Leo Varadkar, current Taoiseach Micheál Martin and former Minister for

Health Stephen Donnelly involved in a total number of 81,505 posts, with many of the posts consisting of a violent nature and some including threats towards these individuals due to their stance on COVID-19 and asylum seekers (Gallagher, 2023). 94% of households in Ireland have access to the internet, indicating it is almost the norm in Irish society, with a further 96% of households in Dublin having access. Surveys indicate 94% of these users go online daily, and almost 39% of those individuals use it 'all/nearly all the time' (Central Statistics Office, 2023), suggesting more and more individuals are being exposed to this behaviour. According to one report, Ireland was home to 4.01 million social media users as of January 2024, adding up to 79% of the total population (DataReportal, 2024).

Social media is defined as media developed around communication through networking, and can be thought of as a virtual social gathering destination (OxfordReference, 2024). It consists of virtual communities on applications where individuals can interact with other people who have similar interests (Tufts, 2024), and allows businesses and creators to exchange their ideas, share their content and collaborate with one another to create engagement in their brand (Buffer, 2024). Social media in modern times is frequently used as a tool by media companies for reporting, with a large chunk of political content that is posted on social media being from different media networks. These media companies also utilize the algorithm and automated accounts or 'bots', to ensure that their news articles and political content are viewed more than others (Garg et al., 2024). Individuals' algorithms may also be influenced by who they are friends with or follow on the platform, with results in one study suggesting that individuals with friends who are politically engaged reporting increased exposure to political content (David et al., 2019). Similarly, algorithms can be shaped and influenced by the AI system developer's personal political bias. This then influences the individual on the receiving end, who's political opinions may be shaped by the manager of the algorithm development (Peters, 2022).

#### **Political Bias**

Political bias is not known to be a particular, individual psychological phenomenon within human cognition and is easier to define as an implicit/explicit process which can affect both ends of the political spectrum (Peters, 2022). Although 'bias' itself, or more specifically cognitive bias, is considered a psychological phenomenon, with cognitive bias being down to the lack of an ability to process the information which is available to an individual. This inability may stem purely from selective attention, and an individual's focus on information that is more noticeable or seems more important, while ignoring the other information completely (Kruglanski & Ajzen, 1983).

People on either side of the political spectrum, being the left and right are constantly arguing and lobbying for political power, but both sides are not completely separate and share some overlap the more central you are on the spectrum (Peters, 2022), which ranges from extremely left to extremely right leaning (Heywood, 2015). Interestingly, the levels of polarization and political bias within the population of a country has been found to be down to the political system which that country employs, with higher levels of political polarization happening in countries which have a two-party political system, like the United States of America (Urman, 2019).

Extreme right-wing views can be described as anti-democratic processes i.e. fascism, violent natured behaviour i.e. terrorism, belief in conspiracy theories and intense nationalism, although these labels are debated by those who are defined by them (Blee & Creasap, 2010). Findings from Costello et al. (2022) suggest that far-left individuals share some similarities with individuals with far-right views, most notably violent natured behaviour, but differ in the aspect that this violence would be against the political system in power, with right-wing political violence perpetrated in support of that system. General right-wing ideology, also known as conservatism, supports a free market, capitalism and private ownership, and

favours traditional social ideas, with violence predominantly never being a considered a tactic or goal (Blee & Creasap, 2010). General left-wing ideology can be characterized by belief in freedom, rights, and social progress, and can include socialists, communists, democrats and liberals (Ostrowski, 2023;Ostrowksi, 2022).

Understanding political bias on social media is essential to understand echo chamber effects and misinformation. Social media platform X in particular was found to have quite a high rate of polarized users, as research suggests that users on both the left and right of the political spectrum held a political bias and a negative attitude towards their counterparts (Tripuranemi et al., 2023). A study on university students in Türkiye looked into behaviours and usage of social media platforms, through surveys which gathered information on how algorithms affect suggested posts on newsfeeds, perspectives on whether social media has a polarizing or depolarizing effect on individuals, and the number of times per day that individuals checked social media, with 43% checking over ten times per day. 38.9% of these students carried a high level of polarization with their opposing political party, which gave researchers an insight into how the more they used social media per day, the more negative they felt over their opposing party, and the more polarized they became (Wazzan & Aldaman, 2023). This also correlates with findings by Kiralti (2023) which found higher social media use to be associated with lower trust in the EU among a sample of European citizens. This negative view of the European Union is stronger within regions with stronger internet connections, and regions with weaker internet and broadband connections associated with higher political trust (Kiralti, 2023). However, data analysed on Facebook indicated a depolarization effect in young users (Heiler, 2024), while the Dutch Prime Minister's Twitter communication showed cross-party interactions, refuting the existence of "echo chambers" (Esteve-Del-Vall, 2022). While these studies do give us greater context when it comes to social media and political bias, both studies by Heiler (2024) and Esteve-Del-Vall (2022)

used small, and very specific samples which may be a possible explanation for these results. However, these results from Esteve-Del-Valle (2022) do also suggests that with greater engagement and cross-party interactions, social media use by politicians can be used as a positive tool which encourages depolarisation. More thorough research on this topic has indicated that polarization or bias may increase with age (Phillips, 2022), while research in China found evidence to suggest this is the case across all measures which were included within in the study (Yu & Zhao, 2021). Within the literature gender has also been found to be an indicator of levels of polarization in politics, with findings from Hatemi et al. (2009) showing that men and women differ politically due to both environmental and biological reasons, and Ondercin & Lizotte (2021) finding that women show higher levels of political bias than men.

There is evidence in the literature to suggest that social media companies are in some way a significant contributor for the rise in xenophobia due to the ease that hate speech is circulated online. Individuals online can organise protests easily on these platforms, and the same can be said for hate crimes (Zhuravskaya et al., 2020). Bias on social media is not limited to ordinary users, as journalists with political agendas of their own are known to select which events to cover and share on their media profiles, and like media outlets with political slants, these can sway attitudes of other users (Sharma et al., 2020). Social media has the capability to limit exposure to opposing views and perspectives of other individuals, leading to the creation of echo-chambers among like-minded individuals which reinforce ideas, both negative and positive (Cinelli et al., 2021), and people who create a bubble for themselves on social media tend to be more stubborn towards views which oppose their own and are more likely to be hostile towards the individuals with them (Gillani et al., 2018).

Research conducted by Lee et al. (2020) argued that political expression on social media platforms may be a lot more likely when an individual perceives themselves or the

platform of their choice as politically open-minded. In theory this open-mindedness may increase their chance of susceptibility to more radical views and fake news, as algorithms are made to show us content on platforms that we look at for a longer amount of time, which is likely to be something we do not agree with or enjoy morally (Kim, 2017). So, individuals may find themselves antagonized at one particular individual's views, and look at the post for an extended amount of time sifting through the comments, which only leads to an increased exposure to similar content therefore either creating echo-chambers. This then causes the reinforcement of existing views and ideas that a group may already have, and push the group to more extreme point of views (Wazzan & Aldaman, 2023). It can be suggested that social media in particular is responsible for this amplification of political grievances by individuals across the globe, as the reach that anybody can have, regardless of profession or fame, can lead to information spreading with ease (Zhuravskaya et al., 2020). This in turn increases the number of individuals that are unhappy or disillusioned with their governments and willing to take part in radical political discourse online, or protests in public (Zhuravskaya et al., 2020).

#### **Open-mindedness**

Open-mindedness is defined by Dolbier et. al. (2025) as "an individual's willingness and ability to consider alternative viewpoints". It can be said that open-mindedness does not receive the attention it deserves, and that as a trait it may just be a belief about oneself or particular beliefs, but it can be summed up as a quality of awareness that you may not always be correct in your beliefs and are open to a fresh point of view (Speigel, 2012). This quality has also been theorized to be both a positive and a negative in an individual, as negatively it may expose a lack of belief in your own views once they are in any way questioned, or positively it shows that you have an honest pursuit for information and critical thinking of fresh ideas (Hare, 2009). In one study with a large sample of 9,010 participants, it was found that ageing had a great impact on open-mindedness, with levels of open-mindedness found to

decrease from young to older participants (Edgcumbe, 2022). This correlates with research on a sample of university students, with findings that indicated Age as the variable with the most influence on levels of open-mindedness (Cabellero-Garcia & Ruiz, 2024), while gender was also found to be a statistically significant variable within this study, suggesting that women may have higher levels of open-mindedness than men.

There is a growing concern that social media sites provide individuals with platforms which insulate them from opposing views to their own, or "echo chambers" (Bail et al., 2018). This can also lead to individuals being taken advantage of through social media and technology in general, as research on the topic found that individuals with low levels of truth discernment and open-mindedness failed to recognize false messages/fake news regarding the COVID-19 pandemic which was spread throughout the messaging app 'WhatsApp' (Bonafe-Pontes, 2021). It has been found that this does not always work in a positive way, as one of the main problems social media can cause society is the ability it has to create large echo chambers of political thinking, which can lead to a polarization in your own frame of mind (Zhuravskaya et al., 2020; Levy & Razin, 2019; Barbera, 2020). Although there is evidence to suggest that this is only the case in the most partisan of communities, and that many individuals are exposed to diverse views (Garimella et. al., 2018; Dubois & Blank, 2018).

If an individual is close minded, they may also completely avoid any information which does not align with their beliefs, for example, if someone has strong opinions on how immigration negatively effects their country, they may completely ignore any information which highlights its positive contributions (Meng & Wang, 2024). In the US, liberals think conservatives are close-minded while conservatives think liberals are the close-minded individuals, which has led to them moving into different areas and neighbourhoods (Dolbier et al., 2025). Interestingly, research from Lee et al. (2020) suggests that an exposure to political interactions on social media may increase open-mindedness of individuals and

influence them to engage in their own political expression online. For example, young individuals have historically been less inclined to engage in politics compared to older citizens, with policies not seeming as important to them as their education or social life, although recently they have become more engaged due to accessibility on social media (David et al., 2019).

### **The Current Study**

The evolving landscape of Irish politics reflects global trends towards the emergence of more radical political views on both the left and the right of the political spectrum (Harrison, 2024; Zhuravskaya et. al., 2020), facilitated by the current social media platforms (Lee et. al., 2020; Cinelli et al., 2021). Algorithms on these platforms can influence political polarization by reinforcing users existing biases and facilitating the spread of extremist content (Kim, 2017; Wazzan & Aldaman, 2023). Meanwhile, individuals' levels of openmindedness play a crucial role in their susceptibility to radicalization and misinformation online (Bonafe-Pontes, 2021).

Past research acknowledges the variability of political open-mindedness across cultures, warranting further investigation into its universality (Speigel, 2012). Tripuraneni (2023) highlights a scarcity of prior studies forecasting political bias, underlining the need for more comprehensive research in this domain. This gap in the literature underscores the importance of exploring different cultures and how they can be influenced by social media and enhance the generalizability of future findings.

Previous studies have looked at individuals' perspectives and opinions on social media itself being polarizing, while this study will focus on participants explicit opinions on political polarization, with the aim to uncover the implicit effect of social media.

Furthermore, many studies on social-media's relationship with political polarization used data from a pre-pandemic society, where social media, and trust in political institutions may have changed since. Therefore, revised research on the topic of social media and political bias may be beneficial for the literature. Research on political polarization also has not considered that polarization could come from specific political ideologies themselves, and therefore within this study we have directed participants to identify their preferred political ideology.

Previous studies on open-mindedness have utilized different versions of the Actively Open-minded Thinking Beliefs Scale (AOT), such as the AOT-7 and the AOT-e, which both have poorer reliability compared to the AOT-11 which I will be using within this study. Moreover, research on both open-mindedness and political bias is limited within the context of an Irish society, which is particularly important in the context of events on our streets within the last eighteen months. Therefore, the aim of this research is to produce findings which provide a better understanding of how open-minded and politically polarized Irish residents have become in recent times. The aim of this research is to investigate the influence of social media sites on open-mindedness and bias in Irish politics, with a focus on understanding the influence of the level of an individual's social media usage on the political attitude. These aims have inspired the following research question and hypotheses:

Research question: What is the relationship between social media usage and openmindedness and bias in the context of Irish politics?

Hypothesis 1: Age, gender, what type of political content is viewed, time spent viewing political content on social media per day, and political affiliation, will have a statistically significant relationship with levels of open-mindedness.

Hypothesis 2: Age, gender, what type of political content is viewed, time spent viewing political content on social media per day, and political affiliation, will have a statistically significant relationship with levels of political bias.

#### Methods

The participants which make the sample of this survey are current residents of Ireland, that are 18 years of age or older, who have any social media accounts. Participants were recruited from the population through opportunistic snowball sampling, and were recruited through social media sites such as Instagram, Reddit, and WhatsApp (see Appendix A). Posters were also used to recruit participants (see Appendix B), and participants were asked to share the questionnaire with individuals that were eligible to participate or would be interested in the study. The number of participants required for this study was 90. This sample size was calculated using the regression rule of thumb formula  $(50 + 8 \times 10^{-4})$  No. of Predictor Variables;  $50 + 8 \times 5 = 90$ ). The final sample consists of 91 individuals (males = 49, females = 40, non-binary = 2), with a mean age of 29.8 (SD = 8.62) ranging from 19 to 60.

#### Measures

Demographics: Age was measured as a continuous variable, with individuals stating their age in an answer box. Gender was measured categorically, with participants answering from options of 'Male', 'Female', 'Non-binary', and 'Prefer to self-describe'. Time spent viewing political content online was measured as a continuous variable with participants stating how long per day they view political content online in minutes. For example, if individuals view political content for 2 hours per day, their answer in the comment box would be '120'. What kind of political content is viewed was measured categorically with options of 'None', 'Left-Wing', 'Right-Wing', and 'Both' to choose from (see Appendix C).

Political Identification Scale: Political Affiliation was measured using the Political Identification Scale, which is a 7-point Likert-scale consisting of one item, ranging from 'Far-Left' to 'Far-Right' (Michael & Breaux, 2021) (see Appendix D).

Actively Open-Minded Thinking Beliefs Scale: Open-mindedness was measured using the Actively Open-Minded Thinking Beliefs Scale (AOT), which is a 5-point Likert-scale, consisting of 11 items ranging from 'completely agree' to 'completely disagree'. Items 1, 2, 4, 6, 9, and 11 were reverse scored\* (see Appendix E). This questionnaire has a minimum possible score of 11 and a maximum possible score of 55. A high score in this questionnaire would indicate that an individual is open-minded, with a low score indicating close mindedness is prevalent. The AOT has had many different versions, but this 11-item version was chosen as it has been found to be as reliable as other versions, correlates highly with other measures, and is the current recommended version (Baron, 2019), with a Cronbach's alpha score of .84 (Stanovich & Toplak, 2023).

\*This is the opposite way the original scale is used, and the opposite items were reverse scored due to an error in the survey creation. This error was identified and corrected during analysis so higher scores still represented open-mindedness.

The Affective Polarization Scale: Political bias was measured using The Affective Polarization Scale (McMurtrie et al., 2024), which is a 7-point Likert-scale consisting of 15 items, ranging from 'strongly disagree' to 'strongly agree' (see Appendix F). This scale has a minimum possible score of 15 and a total possible score of 105. A low score in this questionnaire would indicate that an individual is not politically polarized or bias, and a high score would indicate that individuals are politically bias. This scale has been found to have very good reliability and good construct validity, with a Cronbach's alpha score of .94 (McMurtrie et al., 2024).

### **Design:**

This research deployed a multivariate cross-sectional, quantitative survey. It included five independent variables (age, gender, time spent viewing political content on social media, what type of political content is viewed, & political affiliation) and two dependent variables (open-mindedness and political bias).

#### **Procedure:**

Participants learned about this study through social media posts on Reddit and Instagram, or through posters on notice boards in cafes and the NCI campus. Information was provided to the participants through an information sheet (see Appendix G), outlining that the research conducted aimed to create a clearer perspective on the influence of echo chambers, algorithms and exposure to radical views can have on an individual's perspectives and openmindedness. It was also outlined that the research is conducted by Joseph Flood, with supervision conducted by Dr Lynn Farrell of the National College of Ireland. The information sheet outlined the demographic questions and questionnaires, along with the ten-minute time commitment that was needed to complete the survey.

The participants rights, such as the ability to stop taking part in this study without explanation, were outlined in the information sheet, along with the benefits and risks associated with participation, such as mild psychological distress caused by political content. Resources were provided in the debrief sheet with this in mind. The individual's confidentiality and anonymity were also explained, along with where the results of the study were possibly presented. The participants were also directed towards contact information if any further explanations were needed at any time.

Consent was obtained for individuals to partake in this survey through a consent form which outlined exactly how the participants information would be used. Participants agreed

through a Yes or No question on the survey which was required to be answered before they could progress to the demographic questions and questionnaires (see Appendix H).

Participants then ensured their eligibility by answering a question confirming they are a current resident of Ireland (see Appendices I). No pilot study was required for this survey.

Participants then completed a set of demographic questions, stating their gender, age, what kind of political content they view on social media, how long they spent viewing political content online, and how many minutes per day (on average) they spent viewing political content on social media. Once demographic questions were completed, a set of questionnaires were then answered. A Political Identification Scale was implemented to measure the participants political ideology. Participants then engaged in the Actively Open-Minded Thinking Beliefs scale to determine their level of open-mindedness. Following this, the Affective Polarization Scale was implemented to measure the participants political bias. More detailed information on these scales is available in the above Methods section.

Participants were then brought to a debrief sheet, thanking them for their time and participation, and helping to broaden the knowledge on this topic. Contact information was provided for any further questions on the survey, and more information was provided on how data will be anonymised in line with Open Science best practice and conventions. Resources were then provided due to the possibility of any participants finding any part of the completion distressing (see Appendix J).

Data was collected using Google Forms, and upon completion of data collection information was converted into a Google Sheets file (see Appendix K). Data was then analysed through SPSS (see Appendix L).

### **Results**

## **Descriptive Statistics**

The current data is taken from a sample of 91 participants (n = 91). This consisted of 53.8% males (n = 49), 44% females (n = 40), and 2.2% non-binary (n = 2). A large proportion of the sample 60% (n = 54) identified as politically left wing; 28.9% (n = 26) identified as politically centre, and 11.1% (n = 10) identified as politically right wing.

Table 1

Descriptive statistics for categorical variables

Variable	Frequency	Valid %	
Gender			
Male	49	53.8%	
Female	40	44%	
Non-binary	2	2.2%	
Political Identification			
Left-wing	54	60%	
Centre	26	28.9%	
Right-wing	10	11.1%	
Kind of Content Viewed Online			
Left-wing	18	19.8%	
Right-wing	6	6.6%	

Frequency	Valid %		
56	61.5%		
11	12.1%		
	56		

There are two continuous variables, age and minutes spent viewing political content online per day. Mean, standard deviation, median, minimum and maximum scores are displayed in Table 1 below. There is one missing response to both age and political identification. When measuring gender against both dependent variables, the non-binary category was removed due the low frequency of responses (n=2).

Table 2

Descriptive statistics for all continuous variables

Variable	M [95% CI]	SD	Median	Range
Age	29.82 [28.02, 31.63]	8.62	27	19-60
Minutes Viewing	46.59 [35.58, 57.61]	52.90	30	0-360
Political Content				

### **Inferential Statistics**

Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. A significant result (p = .002) of the Shapiro-Wilk statistic was found for political bias indicating that the data is non-normally distributed, and inspections of the histogram showed that the data was positively skewed. Further inspections of the residuals indicate that data was normally distributed and as such the scores were treated as normal (see Appendix M). Three outliers were identified between the two

dependent variables, and after inspecting the data it was seen that the responses were within the boundaries of possible scores on the measures.

### **Hypothesis 1**

Multiple regression analysis was performed to investigate the influence of age, gender, political identification, time spent viewing political content online, and what kind of political content is viewed, has on levels of open-mindedness. Correlations between the predictor variables included in the study were examined. Two of the eight predictor variables were significantly correlated with the criterion variable – with age (r = .23, p = .016) and minutes viewing political content per day (r = .29, p = .003). Correlations amongst the predictor variables were also examined with r values ranging from -.81 to .40, therefore indicating that the assumption of multicollinearity was not violated, and the data was suitable for regression analysis.

Table 3

Correlation Matrix for Variables used in Regression Model – Open-mindedness

1.00								
.05	1.00							
.29**	26**	1.00						
.23*	16	.09	1.00					
06	.21*	24*	03	1.00				
	.29**	.29**26**	.29**26** 1.00	.29**26** 1.00	.29**26** 1.00 .23*16 .09 1.00			

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.
6. Kind of Pol. Content	04	.05*	.13	.03	18*	1.00			
Viewed: Left-Wing									
7. Kind Of Pol. Content	.12	.12	.06	15	10	13	1.00		
Viewed: Right-Wing									
8. Left-wing Identified	.13	.04	.17	.04	25*	.40***	24*	1.00	
9. Centre Identified	12	03	20*	.05	.36***	32**	07	81***	1.00

*Note*: Statistical Significance: \*p < .05, \*\*p <.01; \*\*\*p <.001

Since no *a priori* had been made to determine the order of entry of the predictor variables, a direct method was used for the multiple linear regression analysis. The eight independent variables explained 18.5% of variance in open-mindedness (F(8, 79) = 2.24, p = .033).

In the final model both minutes spent viewing political content ( $\beta$  = .288, p = .010) and age ( $\beta$  = .242, p = .023) were the only significant predictors of open-mindedness. This result indicates that increased levels of exposure to political content and age predict higher levels of open-mindedness.

Table 4

Standard multiple regression table – Open-mindedness

Variable	$\mathbb{R}^2$	В	SE	β	t	p
Model	.185					
Gender		1.295	1.003	.143	1.292	.200
Minutes Viewing Political		.035*	.009	.288	2.629	.010
Content Per Day						

Variable	$\mathbb{R}^2$	В	SE	β	t	p
Age		.127*	.055	.242	2.321	.023
Kind of Pol. Content Viewed:		.159	1.574	.012	.101	.920
None						
Kind of Pol. Content Viewed:		-1.425	1.269	126	-1.122	.265
Left-wing						
Kind of Pol. Content Viewed:		2.749	2.146	.152	1.281	.204
Right-wing						
Left-wing Identified		1.683	1.749	.183	.962	.339
Centre Identified		.403	1.836	.041	.220	.827

Note: Note. R2 = R-squared;  $\beta$  = standardized beta value; B = unstandardized beta value; SE = Standard errors of B; N = 87; Statistical significance: \*p < .05; \*\*p < .01; \*\*\*p < .001

### **Hypothesis 2**

Multiple regression analysis was performed to investigate the influence of age, gender, political identification, time spent viewing political content online, and what kind of political content is viewed, has on levels of political bias. Correlations between the predictor variables included in the study were examined. Three of the nine predictor variables were significantly correlated with the criterion variable – with minutes viewing political content per day (r = .22, p = .017), left-wing identified (r = .40, p < .001), and centre identified (r = .33, p = .001). The correlations amongst the predictor variables were also examined with r values ranging from -.78 to .40, therefore indicating that the assumption of multicollinearity was not violated, and the data was suitable for regression analysis.

Table 5

Correlation Matrix for Variables used in Regression – Political Bias

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Political Bias	1.00								
2. Gender	.08	1.00							
3. Minutes Viewing	.22*	26*	1.00						
Political Content Per Day									
4. Age	15	16	.09	1.00					
5. Kind of Pol. Content	02	.21*	24*	03	1.00				
Viewed: None									
6. Kind of Pol. Content	.15	.05	.13	.03	18*	1.00			
Viewed: Left-Wing									
7. Kind Of Pol. Content	03	.12	.06	15	10	13	1.00		
Viewed: Right-Wing									
8. Left-wing Identified	.40***	.04	.17	.04	25*	.40***	24*	1.00	
9. Centre Identified	33**	03	20	.05	.36***	32**	07	78***	1.00

*Note*: Statistical Significance: \*p < .05, \*\*p <.01; \*\*\*p <.001

Since no *a priori* had been made to determine the order of entry of the predictor variables, a direct method was used for the multiple linear regression analysis. The 8 independent variables explained 23.1% of variance in political bias (F(8, 79) = 2.96, p = .006).

In the final model Left-wing identification was the only significant predictor of political bias ( $\beta$  = .401, p = .03). This result indicates that individuals who have a left-wing ideology have higher levels of political bias.

Table 6
Standard multiple regression table – Political bias levels

Variable	$\mathbb{R}^2$	В	SE	β	t	p
Model	.231					
Gender		2.334	4.129	.061	.565	.574
Minutes Viewing Political		.076	.039	.210	1.973	.052
Content Per Day						
Age		365	.225	164	-1.619	.109
Kind of Pol. Content Viewed:		6.896	6.484	.118	1.064	.291
None						
Kind of Pol. Content Viewed:		531	5.228	011	102	.919
Left-wing						
Kind of Pol. Content Viewed:		2.668	8.840	.035	.302	.764
Right-wing						
Left-wing Identified		15.609*	7.204	.401	2.167	.033
Centre Identified		117	7.562	003	015	.988

*Note*: Note. R2 = R-squared;  $\beta$  = standardized beta value; B = unstandardized beta value; SE =

Standard errors of B; N = 87; Statistical significance: \*p < .05; \*\*p < .01; \*\*\*p < .001

#### **Discussion**

This study aimed to investigate the association between social media, and both open-mindedness and political bias in Ireland. This current study wished to deliver a better understanding of the political mindset within Ireland by assessing their levels of open-mindedness and political bias, in the context of their social media habits, political ideology, age, and gender.

Previous research has indicated that social media platforms have been found to have a large amount of highly polarized individuals, with research suggesting users with left and right-wing ideologies hold a political bias and negative attitude towards their counterparts (Tripuranemi et al., 2023). With a growing concern that social media sites have provided individuals with platforms which can insulate them from opposing views of their own (Bail et al., 2018), open-mindedness in society has become increasingly important. There are theories within the literature that open-mindedness can be both a positive and a negative characteristic. Negatively it may expose a lack of belief in your own views, or positively it may show a pursuit of information beyond your current knowledge, and shows critical thinking of fresh ideas (Hare, 2009).

The first hypothesis suggested there would be a relationship between age, gender, type of political content viewed, minutes spent viewing political content on social media per day, political ideology and levels of open-mindedness. The final model accounted for 18.5% of the variance in open-mindedness levels. This was analysed through a standard multiple regression, which indicated that there is a statistically significant, positive relationship between open-mindedness and both age and minutes viewing political content per day. This indicates that the more time spent looking at political content on social media, the more open-minded individuals would be. Similarly, the result suggests that the older an individual gets in age, the more open-minded they will be. However, with an average age in participant of 29

and a range of 19-60, there is a possibility that this result may not be generalisable to anyone above the age of 40.

The second hypothesis suggests that there would be a relationship between age, gender, type of political content viewed, minutes spent viewing political content on social media per day, political ideology, and levels of political bias. The final model accounted for 23.1% of the variance in levels of political bias. This was also analysed through a standard multiple regression, which indicated that there is a statistically significant, moderate positive relationship between identifying as politically left-wing and being politically bias.

Previous research from Lee et al. (2020) found evidence to suggest that an increase in exposure to different political expression and viewpoints on social media, led to an increase in open-mindedness within their sample. This is consistent with our findings (Hypothesis 1) which suggest that there is a correlation between minutes spent per day viewing political content online, and high scores on the AOT-11 scale. This indicates that the more time spent interacting with or viewing political content online, the more open-minded an individual becomes. This may influence future policy on algorithm development and inspire governments to encourage social media companies to develop algorithms which lean towards exposure of different points of view, abolishing any algorithms which may potentially create echo chambers.

In relation to levels of open-mindedness, we have found evidence (Hypothesis 1) to suggest that open-mindedness levels increase with age. We found that age is a statistically significant predictor of higher levels of open-mindedness, with a positive correlation between the two variables. This is similar to research which found that age is the variable with the most influence on levels of open-mindedness (Cabellero-Garcia & Ruiz, 2024), but other studies have found that levels of open-mindedness decrease in individuals with age

(Edgecumbe, 2022). This difference in results may be due to the low mean in age within our sample, mentioned above. With an average age of 29 and a range of 19 to 60, the vast majority of our participants are in their 20's. If open-mindedness increases with age, this may lead to policy change on retirement age and organisational leadership mindsets towards older individuals within the workforce as they may be more adaptable than previously believed.

Regarding levels of political bias, just one of our independent variables (Hypothesis 2) had a statistically significant relationship. Left-wing identification had a moderate positive correlation with higher levels of political bias. This finding could indicate that individuals with a left-wing political ideology in life have higher levels of political polarization and have a tendency for negative attitudes towards opposing political ideologies i.e. right-wing ideology. These findings do not correlate with the current literature on the topic, as Tripuranemi et al. (2023) did find that social media did have a large number of polarized users, but they were on both the left and right side of the political spectrum, not just left-wing as is our case. Previous studies appear to have shown that people with either left or rightwing ideologies have comparable levels of political polarization (Ditto et al., 2018; Clark et al., 2019). A possible reason for a difference in these findings and the general literature is the high level of the sample that consider themselves to be left-wing politically, with 60% of the respondents indicating that they have left-wing preferences. However, these results may influence future policy focused on diversity of viewpoints within left-wing media spaces, similar to the previously mentioned policy alteration on social media algorithms to show a broader range of mindsets and viewpoints rather than creating echo chambers.

Previous research on social media usage levels and political bias suggested that the more negatively they felt towards their opposing party, with 38.9% of participants showing high levels of polarization (Wazzan & Aldaman, 2023). Kiralti (2023) also found evidence to suggest that higher levels of polarization are associated with higher levels of social media use

per day. Our findings suggest the opposite, as we did not have a statistically significant result when measuring the relationship between political bias levels and minutes spent viewing political content per day. This finding suggests that however long you spend viewing opposing political ideas online has no effect on levels of political polarization. This is similar to findings from Esteve-Del-Valle (2022) which found reason to believe social media can be used as a positive for society and as a depolarisation tool. Similar to the implication of open-mindedness being linked with increased time spent viewing political content online, the lack of a relationship between the amount of content consumed per day and political bias levels may indicate policy is needed towards algorithm development which encourages the consumption of differing points of view. This in turn will help foster consistent results regarding screen time, open-mindedness levels and levels of political bias.

In this current study, a non-significant result was found when testing the relationship between age and political bias, suggesting that age has no influence on levels of political bias on individuals within our sample. This differs from previous literature on the topic, as both Phillips (2022) and Yu & Zhao (2021) have found evidence to suggest that levels of political polarization would increase with age. Our research may help towards a change in perception and challenges stereotypes towards older individuals within our society. We found no relationship between gender and political bias, with a non-statistically significant result and a weak positive correlation between the variables. However, this does not align with previous literature on the topic, which has found that gender is a predictor of levels of polarization in politics and that women show higher levels of political bias than men (Hatemi et al., 2009; Ondercin & Lizotte, 2021). Similarly to our previous finding on age and political bias, this non-significant result on the relationship between gender and political bias levels may change perceptions that any gender is more politically bias or polarized than the other. Additionally,

it suggests that any future policies which are being created to combat rising political bias levels in society, should ignore gender-specific policies.

Cinelli et al. (2021) found evidence to suggest that social media has the capacity to limit exposure to opposing views and perspectives online, creating echo-chambers. Although we did not find any significant results regarding what kind of political content participants viewed online in relation to both open-mindedness and political bias, 61.5% of respondents indicated they viewed both right & left-wing content on a regular basis, which may in some way indicate that social media may not create echo-chambers the majority of the time.

While this is the case, 19.1% of respondents indicated that they only view left-wing political content online, which is the second largest response to that question in the survey. With the information that left-wing ideology has a relationship with political polarization found in our results, we may be able to suggest that there are a small number within our sample that have created an echo-chamber of left-wing opinions for themselves online. This aligns with findings by Gillani et al. (2018) who found that people who create a bubble for themselves online are more likely to be hostile towards individuals with opposing views to their own. This gives support to the theory that echo-chamber development is one of the main ways that social media can harm society (Zhuravskaya et al., 2020; Levy & Razin, 2019; Barbera, 2020). Once again, policy towards algorithm development should be catered towards encouraging a broad range of perspectives being on offer within social media spaces.

### **Future Research & Implications**

While these are all interesting findings, there are problems within the results which are conflicting given some of the demographic descriptive statistics. There were significant results regarding left-wing ideology & political bias levels, and age & open-mindedness.

Given 60% of our sample identified as left-wing, and the mean age of the sample was 29 in a

range of 19-60, our results have indicated that our sample was mostly of young, left-wing, politically polarized & also open-minded individuals. For future research on this subject, researchers should focus on studying participants implicit bias through an Implicit Association Test (IAT) rather than allow participants to morally consider their answers when completing a survey, to avoid these contradicting results and a self-report bias occurring.

Within the demographic questionnaire, there was no question regarding which specific platforms participants frequented in their daily lives. Future research on this topic should be directed at finding which specific platforms have greater influence on the traits of open-mindedness and bias. Further research on this topic should also look deeper into the relationship between time spent viewing political content online and open-mindedness. It would be beneficial to the literature to determine if people view more political content online per day due to the fact they are already open-minded, or are they open-minded due to the amount of content that they view.

Further limitations within this research project include the small number of responses in some categories such as only two participants within the non-binary category, and only 10 (11%) of participants identified as right-wing. Further research should focus on recruiting more individuals who identify as right-wing. This research was also time limited to a very short period, from October 2024 to January 2025. Finally, preliminary analyses of the dependent variables indicated that the political bias variables Shapiro-Wilk test resulted in a significant result, but further analysis of the residuals found there to be a linear pattern to justify analysis.

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# **Appendices**

# Appendix A



# Appendix B



Appendix C	
Demographic Questions	
Gender	
0	Man
0	Woman
0	Non-binary
Prefer to self-describe gender	
Age	
What kind of political content do you view on social media?	
0	None
0	Left-wing
0	Right-wing
0	Both
How many minutes per day, on average, do you spend viewing political content on social	
media? Please estimate the total time in minutes (not hours). For example, if you view	
political content for 30 minutes per day, enter '30', 2 hours a day, enter '120' etc.	

# Appendix D

#### **Political Identification**

This Political Belief Scale is a 7-point scale consisting of one item, ranging from Far Left - Far Right, and is used to measure an individual's political beliefs.

Please use the response options below to indicate your political affiliation.

Far Left - 1, Middle Left - 2, Weak Left - 3, Centre - 4, Weak Right - 5, Middle Right - 6, Far Right - 7

# **Appendix E**

# **Open-Mindedness**

The Actively Open-Minded Thinking Beliefs (AOT) scale is a five-point Likert-scale of 11 items, ranging from "Completely Agree" to "Completely Disagree", and is used to investigate beliefs and opinions on open-mindedness.

Please use the response options below to indicate your opinion on each of the following statements.

Completely Agree - 1, Agree - 2, Neither Agree nor Disagree - 3, Disagree - 4, Completely Disagree - 5

- 1. True experts are willing to admit to themselves and others that they are uncertain or that they don't know the answer.
- 2. People should take into consideration evidence that goes against conclusions they favour.

- 3. Being undecided for unsure is the result of muddled thinking
- 4. People should revise their conclusions in response to relevant new information
- 5. Changing your mind is a sign of weakness
- 6. People should search actively for reasons why they might be wrong
- 7. It is OK to ignore evidence against your established beliefs
- 8. It is important to be loyal to your beliefs even when evidence is brought to bear against them
- 9. There is nothing wrong with being undecided about many issues
- 10. When faced with a puzzling question, we should try to consider more than one possible answer before reaching a conclusion
- 11. It is best to be confident in a conclusion even when we have a good reason to question it

# Appendix F

### **Affective Polarization Scale**

The Affective Polarization Scale is a seven-point Likert-scale of 15 items, ranging from "Strongly Disagree" to "Strongly Agree".

Please use the response options below to indicate your opinion on the following statements.

- 1- Strongly Disagree, 2- Disagree, 3- Somewhat Disagree, 4 Neither Agree nor Disagree, 5- Somewhat Agree, 6- Agree, 7- Strongly Agree
  - 1. I would be upset if my friend married a person with opposing political beliefs
  - 2. I would be upset if a close family member married a person with opposing

- 3. I would not like it if a person with opposing political beliefs moved into the house next door
- 4. I avoid forming friendships with individuals with opposing political beliefs
- 5. I try to avoid socialising with individuals with opposing political beliefs
- 6. People with opposing political beliefs are hypocritical
- 7. People with opposing political beliefs are immoral
- 8. People with opposing political beliefs are unfriendly
- 9. People with opposing political beliefs are dangerous
- 10. People with opposing political beliefs are mean
- 11. I am happy when negative things happen to people with opposing political beliefs
- 12. I am happy when people with opposing political beliefs look bad
- 13. I like to make people with opposing political beliefs angry
- 14. I like to see people with opposing political beliefs put in their place
- 15. It is appropriate to mock people with opposing political beliefs

# Appendix G

# **INFORMATION SHEET:**

# **INVITATION**

You are being asked to take part in a research study on the Influence of Social Media on Open-Mindedness and Bias in Irish Politics. The research conducted aims to create a clearer perspective on the influence that echo chambers, algorithms and exposure to radical views can have on an individual's perspectives and open-mindedness. The research will be conducted by myself Joseph Flood, and will be supervised Dr Lynn Farrell of the National College of Ireland.

#### WHAT WILL HAPPEN

In this study you will be first asked two initial demographic questions regarding your gender & age, followed by two multiple choice questions regarding which sort of political content you view online & how much time per day is typically spent viewing political content.

You will then complete a Political Identification Scale which is a 7-point Likert-scale of one item, ranging from "Far Left" to "Far Right".

Following this, you will then complete the Actively Open-Minded Thinking Beliefs (AOT) scale. The AOT is a 5-point Likert-scale of 11 items, with answers ranging from "Completely Disagree" to "Completely Agree".

Finally, you will then complete the Affective Polarization Scale (APS). The APS is a 7-point Likert-scale of 15 items ranging from "Strongly Disagree" to "Strongly Agree".

# TIME COMMITMENT

This study will typically take 10 minutes to complete in one session.

### **PARTICIPANTS RIGHTS**

You may decide to stop being a part of the research study at any time without explanation.

You have the right to ask that any data you have supplied to that point be withdrawn/destroyed. You can withdraw from the study by closing your browser window and not submitting your responses. Once you submit your responses you will no longer be able to withdraw your data as responses are anonymous. You have the right to omit or refuse to answer or respond to any question that is asked of you. You have the right to have your questions about the procedures answered (unless answering these questions would interfere

with the study's outcome). If you have any questions as a result of reading this information sheet, you should ask the researcher before the study begins.

#### **BENEFITS AND RISKS**

Participants will be making a beneficial contribution to the literature on political bias, openmindedness and social media usage. Individuals who partake in the surveys provided may suffer some level of mild psychological distress due while filling out the questionnaire, as certain questions involving opinions on individuals with opposing political views may be personally distressing. If this is the case, there will be resources provided in the debrief sheet.

# COST, REIMBURSEMENT AND COMPENSATION

Your participation in this study is voluntary.

### **CONFIDENTIALITY/ANONYMITY**

The data we collect do not contain any personal information about you except for your Age, Gender, Political Affiliation, Time spent viewing political content online, and What kind of political content is viewed. No identifying information (e.g. name, email address) will be collected in the survey.

The results of this study will be presented in my Final Year Thesis for the National College of Ireland. There is a possibility that this research may be submitted for publication to an academic journal and/or presented at an academic conference.

Anonymised data will be stored on NCI servers in line with NCIs data retention policy. It is envisaged that anonymised data will also be uploaded to a secondary data repository to facilitate validation and replication, in line with Open Science best practice conventions.

### FOR FURTHER INFORMATION

I will be glad to answer any further questions you may have about this study at any time. You may contact me at x21215766@student.ncirl.ie or my supervisor at <a href="mailto:lynn.farrell@ncirl.ie">lynn.farrell@ncirl.ie</a>

# Appendix H

#### **Consent Form**

In agreeing to participate in this research I understand the following:

- The method proposed for this research project has been approved in principle by the Departmental Ethics Committee, which means that the Committee does not have concerns about the procedure itself as detailed by the student. It is, however, the above-named student's responsibility to adhere to ethical guidelines in their dealings with participants and the collection and handling of data.
- If I have any concerns about participation, I understand that I may refuse to participate or withdraw at any stage by exiting my browser.
- I understand that once my participation has ended, that I cannot withdraw my data as
  it will be fully anonymised.
- I have been informed as to the general nature of the study and agree voluntarily to participate.
- All data from the study will be treated confidentially. The data from all participants
  will be compiled, analysed, and submitted in a report to the Psychology Department
  in the School of Business.

- I understand that my data will be retained and managed in accordance with the NCI
  data retention policy, and that my anonymised data may be archived on an online data
  repository and may be used for secondary data analysis. No participants data will be
  identifiable at any point.
- At the conclusion of my participation, any questions or concerns I have will be fully addressed

I fully understand the research in which I am granting my consent and everything that it entails.

- o Yes
- o No

# Appendix I

# **Eligibility**

Are you currently a resident of Ireland?

- o Yes
- o No

# Appendix J

# **Debrief Sheet**

Thank you very much for your time while completing this research study on the Influence of Social Media on Open-mindedness and Bias in Irish Politics. This survey will help broaden our knowledge on this subject greatly. If you have any follow up questions on this survey, please do not hesitate to contact me by e-mail at x21215766@student.ncirl.ie

SOCIAL MEDIA, OPEN-MINDEDNESS & POLITICAL BIAS

If you wish to withdraw from the study, you can close your browser window now and not

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submit your responses. After you submit your responses, you can no longer withdraw as the

data is anonymous and so cannot be identified for deletion. Results from this study will be

written up as part of my final year thesis and may be published in an academic journal and

presented at academic conferences.

Anonymised data will be stored on NCI servers in line with NCI's data retention policy. It is

envisaged that anonymised data will also be uploaded to a secondary data repository to

facilitate validation and replication, in line with Open Science best practice and conventions.

If the completion of this survey was distressing for you, there will be a link to resources

provided below.

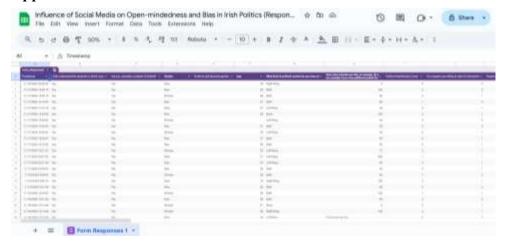
Samaritans: a charity in Ireland which offers emotional support 24 hours a day, 365 days a

year, to anyone who is in distress, lonely or struggling to cope or feeling suicidal.

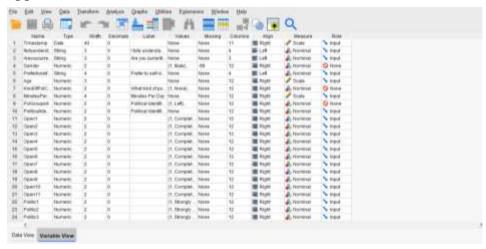
jo@samaritans.org

Tel: 116 123

# Appendix K



# Appendix L



# Appendix M

