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**Does social media give women a fairer shot at election? Exploring the effects of social
media on the perceptions of women in politics.**

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BSc Thesis

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Introduction

The last few decades have seen significant improvement in gender equality within the political field. However, gender parity is yet to be achieved. Despite the legal right to vote and run for elections women now have in most countries, this has not translated into equality of opportunity or outcome. As of 2024, women occupy just 27% of seats in national government cabinets and 35.5% of local government offices worldwide, a stark contrast to the almost 50% of the population women make up (UN Women, 2024; Flynn-Sankoh & Jabbie, 2021).

The gender disparity observed worldwide has profound implications for all individuals, though primarily women. Looking at the benefits of women's presence in government offers insight into why, beyond ethical and moral justice (UN Women, 2024), equal representation is not only desirable but necessary. Firstly, women are found to dedicate more attention to policies that the United Nations deems crucial, such as education, healthcare, social welfare, families and gender-based violence (Bligh et. al, 2011; Guan et al.,

2024). In addition, though gender is only one of the many social divides, the greater inclusion of women in political offices will generate governing bodies that are more representative of the population, thus better at addressing their needs (Bratton & Ray, 2002). In addition, Adams et al. (2023) find that a greater proportion of women in governments could reduce affective polarisation based on the stereotypical perceptions of women's character traits (empathy, warmth, kind, compromising), as women are associated with a better ability to reach a compromise, e.g. between two parties. Empirical research indeed suggests that women are better at reaching palatable compromises (Adams et al., 2023), thus fostering greater socio-political harmony within a country and beyond. Including women at all decision-making levels would have universally advantageous effects, not just for women. To promote greater gender parity and unlock the benefits just discussed, it is essential to understand why women continue to be elected less despite equal qualifications to men. Though Adams et al. (2023) focus on the positives of stereotyped gender attributes towards women, gender stereotypes in politics generally harm women, painting them as less fit for political jobs (Okpokwasili & Ekemezie, 2023). 'Prospective voting' refers to voting for a candidate based on their expected ability to fulfil a particular position (Kleinnijenhuisen et al., 2019). When stereotypes about women reduce their perceived ability to fulfil a role (in politics), this will hinder their electoral success, highlighting the importance of looking at gender stereotypes and their perpetrators, given that, as Bauer (2016) suggests, stereotyped lenses of evaluation are not automatic, they must be activated. "The media" is widely recognised for providing political news, strongly shaping voters' understanding of current events, political candidates, and policy outcomes (Okpokwasili & Ekemezie, 2023). Mass media also has the power to influence which policy areas politicians and candidates are evaluated on (Amsalem & Zoizner, 2023; Rohrbach et al., 2022; Schlehofer et al., 2011).

Thus, the media can both perpetuate and challenge stereotypes while shaping individuals' access to information and, therefore, their perceptions.

Existing research conducted on media and the public opinion of women in politics has a strong focus on *traditional* media and its unequal coverage of male and female candidates/politicians both in the tone and its substantive content to the detriment of women (Bode, 2016; Rohrbach et al., 2022; Hayes & Lawless, 2015; Usher et al., 2018). However, in the wake of the internet era, a new type of mass media, social media, is gaining momentum amongst both individuals (for information) and politicians as an "electoral battleground" (Lee & Xenos, 2019; Amsalem & Zoizner, 2023; van Erkel & Van Aelst, 2020). Notably, social media has some key distinctions from traditional media in its connectivity, lack of barriers to entry and sharing information, and covert mechanisms which can fortify information filtering effects (Bode, 2016). As a result, while negative effects can be expected to be generated by stereotype-perpetuating traditional media, the same might not be true about social media, as it is a fundamentally different type of information-sharing platform. For instance, women are increasingly relying on social media in an attempt to bypass the obstacles posed by stereotype-perpetuating traditional media platforms (Wagner et al., 2017). A recent relevant example is the frequent use of social media by U.S. president-candidate Kamala Harris in her electoral campaign. As existing studies analysing 'the media' and its effects on the perceptions of women in politics remain focused on traditional media, the effects of newer and fundamentally different social media remain unexplored. A small study conducted in Israel found that social media provides an equal ground for coverage of women, but the study does not include whether this is then translated into more favourable opinions of women, thereby befitting their electoral success (Yarchi & Samuel-Azran, 2020). As a result, the question remains, "*How does social media use for political information affect people's perceptions of women in politics?*".

Theoretical work gives rise to contradicting hypotheses about the effect of social media on the public's opinion of women in politics. However, this study finds evidence for the more optimistic one, that social media is conducive to more strongly positive opinions of women and can counterbalance some of the negative impacts of traditional media rather than reinforcing it. The following sections include a review of the barriers women face to political success and representation, as well as the media's (social and traditional) role in this. Subsequently, theoretical perspectives are discussed to generate two hypotheses. The last section broadens the findings and assesses the limitations of this study, finally suggesting avenues for improvement and future research.

Literature Review

Stereotypes, Structural and Normative barriers.

Gender stereotypes are preconceptions about the characteristics men and women should have and which roles they can and should perform accordingly (United Nations Office of the High Commissioner for Human Rights, 2024; Huddy & Terkildsen, 1993). Studies find that the field of politics is associated with stereotypically male traits, such as assertiveness, strength and decisiveness (Eagly & Karau, 2002; Huddy & Terkildsen, 1993,1; Ditonto, 2016; Yarchi & Samuel-Azran, 2020). Women are seen as and expected to be warm, compassionate and empathetic, characteristics deemed incompatible with politics, making women traditionally believed to be well-suited for jobs in the political sphere (Huddy & Terkildsen, 1993; Schneider & Bos, 2014). Under this approach, gender stereotypes negatively impact perceptions of women in politics and, as a consequence, their electability. A different approach to scholarship on gender stereotypes in politics suggests that gender stereotypes can benefit women in terms of electoral success, but this only refers to fields and offices which are perceived to need the same traits associated with women, such as

healthcare, education and family related policies (Bauer, 2016). While it is found that women are better represented in non-gubernatorial offices (the ones that deal with policies in these fields) (Bligh et. al., 2011; Windett, 2014), even if gender stereotypes were to benefit women in certain political domains, this may still be considered a detrimental effect of gender stereotypes insofar as women are confined to certain areas, despite having the skills and qualification to perform well in different sectors too. Then, even under this perspective, women cannot be said to benefit from gender stereotypes, as they remain constrained by them. The gender stereotypes born from early socialisation not only prevent women from running for elections in the first place but also dampen their success if they do run, despite having equal qualifications on paper (Council of Europe, 2018). As the Council of Europe clearly states, "It is not enough to have prepared women candidates. We need prepared voters, who give them their votes" (Council of Europe, 2018).

From the voters' side, several socioeconomic factors interact with an individual's propensity to vote for a candidate that is a woman, thus also more positively evaluating her, including education, socioeconomic status, age and gender (of voters); these will be discussed in more detail in the research design section. More importantly, factors external to an individual's circumstance affect the likelihood of evaluating women through stereotyped notions. For example, through the media, which is identified as a key promoter (or challenger) of stereotypes (Council of Europe, 2018). As Bauer (2016, p. 171) explains, the presence of stereotypes in one's background, does not necessarily mean these will be used in evaluations of women in politics. Instead, an additional factor must come into play and "[activate these stereotypes] by making them more salient in voters' minds" (Bauer, 2016, p. 171). As noted by the European Commission, "The media plays a central role in perpetuating or challenging gender stereotypes" (Council of Europe, 2018) . As a result, the media can be an activator of gender stereotyped evaluations. Taking into account the gender stereotype re-

affirming coverage of women in politics, it seems that traditional media does indeed activate these stereotypes. However, the picture is less clear for social media. Consequently, it becomes important to understand social media's role in shaping voter behaviour towards women, given its differences to traditional media, and its increased popularity.

The Role of 'the Media'

The 'media' can be divided into two main categories: Traditional and social media, both of which play an important role in informing electorates about the current political environment and events. Traditional media refers to outlets like the Radio, Television, and Newspapers (Bode, 2016, p. 29), while social media refers to a variety of online platforms where information is available in large quantities, with low entry barriers, allowing for information to be provided by social media users or politicians themselves in addition to journalists, who are the only ones in charge for information sharing through traditional media outlets (Bode, 2016, pp. 24-26). Studies consistently show a difference in reporting trends of male and female politicians and electoral candidates, one that is disadvantageous for women. Firstly, female politicians and candidates are repeatedly found to receive less coverage on traditional media compared to male politicians; in addition, this coverage is vastly different from that of men (Rohrbach et al., 2022). Male politicians are spoken about in terms of their attributes, qualifications, and successes (in a politically relevant dimension). In contrast, for women, media coverage tendentially focus on their appearance, private lives, and failures instead (Rohrbach et al., 2022; Aaldering & Van der Pas, 2020). Importantly, traditional media outlets are strongly controlled environments where only a limited number of voices (journalists, radio reporters, etc.) are permitted to share information on these platforms, and often prioritise male voices making it hard for women to be represented in the media, as a result of being a male dominated profession (Van der Pas & Aaldering, 2020). These are responsible for shaping individuals' perceptions of the world.

As a result, women receive *limited and biased media* coverage, which reinforces gender stereotypes harmful to women, at least in some political fields (Lawless & Hayes, 2015). As briefly discussed in the introductory paragraph, traditional media outlets are not the only types of media used for political information. *Social* media is an increasingly popular source of political information, particularly among younger generations (Lee & Xenos, 2019). Despite its growing relevance and use by women for their electoral campaigns, scholars have yet to dedicate sufficient attention to its significance for women in politics. As the definition implies, social media differs from traditional media in several important ways. Firstly, social media (unlike traditional media) does not have barriers as to who is permitted to share information; in fact, anyone can share information on social media (Bode, 2016).

Resulting from this freedom of access and lack of oversight, social media is a fertile ground for divulging mis- and disinformation (Hilary & Dumebi, 2021). However, this lack of barriers and oversight can also be an advantage for women by being a platform where women can self campaign (Bode, 2016; Yarchi & Samuel-Azran, 2020; Ross, 2016) In addition, social media platforms, more so than traditional media outlets, have the primary purpose of being sources of entertainment (Bode, 2016). Even so, social media is increasingly used for political discourse and information-sharing. Existing scholarship on media effects on perceptions of women in politics is still minimal when it comes to social media, and a large majority of the few existing studies focus on a single case study, oftentimes (but not only) the United States. This study aims to expand on both of these fronts.

Agenda Setting and Framing Theory

Several theoretical perspectives are used to formulate expectations for the first goal of this paper. Many of them have their roots in the fields of communication, media, and psychology. Theories of agenda setting and framing are crucial starting points in that they provide theoretical ground to believe and expect social (and traditional) media to have an

effect on individuals' perceptions of women at all. Agenda-setting theory originated in the 1980s and is therefore constructed with traditional media in mind (Cacciatore et al., 2016, p. 17). Nevertheless, given that it is grounded in the fact that (traditional) media informs the voting public, social media can also be said to have this power. Fazzell (2018) conducted a study to specifically determine whether social media can be said to have agenda-setting powers, given that social media's primary purpose is not to inform. Indeed, she finds that social media does have agenda-setting powers similar to those of traditional media, and its content is politically influential; as a result, agenda-setting theories are applicable (Fazell, 2018). Agenda-setting theory posits that media sources have an effect on public opinion by providing a limited subset of information (Entemann, 1989; McCombs & Shaw, 2017). Various scholars suggest that the media can only affect issue salience or what individuals think *about*; however, other scholars point out that by affecting what individuals think about, the media also influences what individuals think (Entemann, 1989; McCombs & Shaw, 2017). Important for this paper specifically is that in dedicating more attention to certain issues, "mass media [...] build up images of political figures" (McCombs & Shaw, 2017, p. 105). This once again highlights the media's (in all its forms) influence on public opinion, given that a large majority of voters' knowledge on political issues, including candidates, comes from the media (p. 105). This power of the media draws attention to *what* the media says about women, given that the substantive content of media coverage of candidates will be reflected in voters' evaluations according to agenda-setting theory (Balmas & Scheafer, 2010).

A natural extension of agenda-setting theory, which is also helpful in formulating expectations on the direction of social and traditional media's effects on the public's opinion of women, is framing theory. While 'framing' is conceptualised in several different ways, for the purposes of this study, the definition rooted in sociology, as explained by Cacciatore et al.

(2016), will be employed. Under this perspective, 'framing' is understood as "the selection of one set of arguments over another" (p. 11). Applied to social and traditional media, these theories predict contrasting effects. The "second-level" agenda-setting theory put forward by Balmas & Schaefer (2010) is similar to that of agenda-setting. Essentially, media framings are what become most accessible in the minds of voters, and are replicated in how voters think (Balmas & Schaefer 2010; Sikorki & Maths, 2020). As a result, one can infer that a negative and gender based framing by a media outlet would be replicated in the evaluation of a woman by the voter using that medium of information because the gendered portrayal by the media 'activates' gendered mechanisms of candidate evaluation . Then, returning to what is known about social and traditional media's coverage of women, it can be expected that the biased, politically irrelevant and gendered coverage women receive through traditional media will lead traditional media consumers to evaluate women in politics in that same way. Conversely, social media has both characteristics which, following the aforementioned theories, could positively affect people's perceptions of women, such as the self-advocacy and greater visibility features (McGregor & Mourao, 2016), but also negatively impact these perceptions as a result of fake news and disinformation (Bode, 2016), which will then become the most readily available basis of information to evaluate women, and how individuals evaluate women (agenda setting, second- level agenda setting and framing theories).

Role congruity theory

While the link between negative coverage and negative opinions is somewhat intuitive, gender-stereotyped coverage does not directly claim that women are not adequate for political positions. Eagly and Karau's (2002) "Role Congruity Theory" (p. 573) offers additional insight into stereotyped coverage, even if it does not directly claim that women are less capable than men, still damaging their image and perceived abilities. Eagly and Karau

(2002) explain that when a particular group is looked at in the context of a role that does not align with what is stereotypically expected of that particular group, this "lowers evaluation of the group member as an actual or potential occupant of [that] role" (p. 574). Again, women are stereotypically linked to characteristics like kindness, empathy, and sensitivity and are seen as homemakers, while men are stereotypically viewed as powerful, assertive, confident, and intelligent (Eagly & Karau, 2002; Aaldering & Van der Pas, 2020; Hayes & Lawless, 2015). This implies that negative views towards women in political positions originate from the expectation of 'women's characteristics' being different from those of a good leader, which are stereotypically 'male' characteristics (Eagly & Karau, 2002). Therefore, when media outlets speak about women under stereotyped lenses, and individuals are influenced to also view and evaluate women this way (agenda-setting theories and framing theory), Role Congruity Theory suggests that this will be enough for women to be viewed as less able to perform political jobs. In portraying women in gendered and politically irrelevant ways, as well as framing political issues with language more congruent to expectations from males (Aaldering & Van der Pas, 2020; Wasburn & Wasburn, 2011; Yarchi & Samuel-Azran, 2020), traditional media outlets strengthen gender stereotypes in politics. This will be reflected in people's perceptions of women in politics, who will be seen (compared to men) to be less good political leaders (p. 115).

While role congruency theory may materialise through traditional media outlets that have accounts on social media and other gender stereotype-reaffirming sources, social media allows pro-women sources and women to campaign for themselves, allowing for more positive, and less gendered information, as well as the ability to self-portray with more traditionally 'male' or political characteristics, as some scholars suggest women do to generate better perceptions with regard to their abilities in political spheres (Evans & Clark 2015). Then, according to agenda-setting and priming theories, if this is how they are evaluated,

social media may also allow women to overcome the issues explained by role congruity theory, as they may be able to present themselves in a more role-congruent way and be evaluated under that lens as well. Accordingly, Wagner et al., (2017,) expect that social media may allow women to overcome the barriers imposed upon them by traditional media coverage, evening the ground between themselves and men. Looking at women's participation in their own campaigning and portrayal through social media highlights another crucial barrier imposed by traditional media: its unequal *quantity* of coverage dedicated to male and female candidates.

A Visibility Hypothesis

Women receive far less coverage than their male candidate counterparts in traditional media (Aaldering & Van der Pas, 2020). The greater inclusion of women in political discourse is one of the greater strengths of social media. As Kleinnijenuisen et al. (2019) explain, the tone and substantive content of political information are not the sole contributors to the formation of political opinion; "visibility is a key component in the formation of voter preferences [too]" (p. 562). The visibility hypothesis put forward by various scholars suggests that with greater visibility, candidates are viewed in a more positive light, and voters, therefore, develop more favourable opinions of them. Visibility, as Kleinnijenuisen et al. (2019) note, does not merely entail that politicians are present in the media, though that is important, but that their activity be interacted with by media users. In the context of female political candidates and leaders Kleinnijenuisen et. al., (2019) finds that, on social media, not only are women extremely successful at having their posts liked and re-posted, but they are far more successful at doing this than male candidates and leaders. This means that by being a platform where women are able to be more visible, and with women's success at it, social media use could allow for more positive perceptions of women in politics than

traditional media, not least because of women's ability to portray themselves in politically relevant terms and framings.

Social Networks Theory

This same line of thought is present in social networks theory, which contends that in addition to giving women the opportunity to overcome the biases and barriers created by traditional media, which put women at a disadvantage in politics, women can also more directly communicate politically relevant information to electorates (Boyd, 2010). Studies find that women in politics do extensively take advantage of social media platforms for their campaigns and general engagement with the public (Wagner et al., 2017; Di Meco, 2019). As a result, one can expect a positive effect of social media on the perceptions of women in or aspiring to be in political positions. The more posts are liked and re-shared, the more people they reach.

Filter Bubbles and Echo Chambers

This discussion led to the expectation of a positive effect of social media on the opinions of women in politics, relying both on social media providing more visibility to women in politics, as well as more control (therefore less bias) over their narratives as women take greater charge of their coverage and framings. This was rooted in the core theoretical explanations of agenda setting, framing, and visibility. However, another set of social media-specific theoretical work suggests that this positive effect might not always come to fruition for every social media user. Echo chambers and filter bubbles are responsible for this. The term 'echo chamber' refers to a situation whereby social media users are exposed to only a limited amount of information, which is confirmative of previous beliefs and originates from like-minded individuals (Cinelli et al., 2020; Schlehofer, 2011; Usher et al., 2017). While this could entail pro-women echo chambers, this is often not the case in addition to, once again, misinformation spreading quickly on social media, including

that about women (Cinelli et al., 2020). Sphor (2017) explains that filter bubbles are situations caused by algorithms that are integral to the function of social media (p. 152). These algorithms then curate a personalised informational experience for individuals online, such that (similar to echo chambers, though inadvertently) these individuals are exposed only to attitude-conforming information (Pariser, 2011; Sphor, 2017). While individuals with positive prior attitudes towards women in politics may have these attitudes reinforced, the same will be true for individuals with negative/gendered prior evaluations of women in politics. As a result, the greater diversity of information available on social media might not reach every user. Still, as Westwood (2012) explains, the very 'social' nature of social media allows for an increased likelihood of individuals encountering information that is inconsistent with their previous beliefs. This implies that even though social media has a covertly personalistic nature, even individuals who have negative, gender stereotyping opinions about women, but especially those without prior opinion, are more likely to come across information which paints women in a positive light on social media, rather than traditional media, thus evaluating women this way afterwards.

While the effects of traditional media on perceptions of women seem straightforward, expectations on social media's effects remain mixed, as there are theoretical grounds to expect a positive as well as a negative effect. Still, evidence shows a greater likelihood that an individual will come across politically relevant information, not negatively painting women, on social media rather than through traditional media (Westwood, 2012). As a result, the following hypotheses emerge:

H1: An increase in the frequency of use of social media outlets for information leads to more positive evaluations of female politicians.

H3: An increase in the frequency of traditional media sources for information leads to more negative evaluations of female politicians.

Research Design and Methodology

In order to investigate the effect of social media use and perceptions of women in politics, a quantitative analysis using the 7th wave of the World Values Survey (WVS) will be conducted. The WVS offers the most complete survey, with the most extensive country coverage, spanning across 66 countries, allowing for this research to include data from many more countries than other currently available research conducted around a similar question. However, after data-management, only 58 countries were left, making the final sample size for this study $N = 59671$. Surveys for this wave took place mostly between 2017-2022. This wave is most appropriate as it best captures the most recent context of high social media use compared to earlier waves of this study. In each country, surveys are conducted once per wave, administered in the local language(s) of each country and are conducted either via ‘pen and paper interviews’ (PAPI), or with ‘computer assisted paper interviews’ (CAPI), though in some countries, individuals were surveyed by phone, post, or video call (WVS, 2024).

WVS selects its respondents through random probability representative samples of the adult population (WVS, 2024). Given its temporal relevance, its representative nature, its extensive inclusion of many countries as well as the many questions/variables relevant for the relationship at hand, the World Values Survey (7th wave) will be the most appropriate dataset for this study.

Variables

Dependent Variable

Respondents to the WVS are asked as a part of the survey, to rate their agreement on a scale from 1-4 (Strongly Disagree, Disagree, Agree, Strongly Agree) with the following statement: "On the whole, men make better political leaders than women do" (WVS, 2024, p. 5). Agreement with the statement indicated that the respondent believes men to be better suited for political leadership than women are. However, since the question targets men and women as separate groups rather than specific candidates of each gender, respondents make inferences which are not based on a particular politicians' qualifications for leadership, rather based on the virtue of being a man or a woman. Given the repeated finding that through gender stereotypes women are depicted as inept for politics, this question adequately captures this dynamic of a negative perception of women. Then, greater agreement with the statement indicates more negative perceptions of women, since once again the question is not asking respondents to compare men and women with only gender as a metric of evaluation.

Table 1: descriptive statistics of the dependent variable

DV category	percentage of respondents
Strongly Disagree	20,650
disagree	42,905
agree	24,442
strongly agree	12,002

Independent Variable(s)

To measure the main independent variable (and some controls), the WVS asks respondents, "People learn what is going on in this country and the world from various sources. For each of the following sources, please indicate whether you use it to obtain information daily, weekly, monthly, less than monthly, or never" (World Values Survey, 2024, p. 15). Responses range from 1-5, where 1 = never, and 5 = daily. This question records answers for social media, the main independent variable, as well as three forms of traditional media for tv news, the daily newspaper, the radio, which are included as controls (p. 15). Inclusion of social media allows to expand upon literature on media effects on opinions of women, which is focused on traditional media. Nevertheless, it is important to include measures of traditional media as controls, to compare effects, and to more clearly make inferences on social media effects on the public's opinion of women in politics, and to test hypothesis 3. Individuals are unlikely to rely solely on social or traditional media for information, though this is perhaps different at the opposite extremes of the age spectrum of respondents, thus without controlling for traditional media use, can we not determine the isolated effect of social media or make inferences about its true effect The world values survey inquiries on traditional media use in the same way as social media use. Within the same question which measures the main independent variable on the World Values Survey, respondents are also asked about the frequency with which they obtain information from Daily newspapers, TV News, and the Radio, which are included as predictor variables.

Table 2: descriptive statistics for the Independent variables

	Type of media			
Frequency of use	Social Media	Daily Newspaper	TV News	Radio News
Never	30,070	33,867	8,528	29,631
Less than monthly	5,483	15,207	6,176	12,197
Monthly	4,880	10,214	5,688	8,921
Weekly	12,299	17,886	17,347	17,080
Daily	47,268	22,825	62,261	32,171

Statistical model and Control Variables

Given that both the independent variable, and the dependent variables are ordinal in nature, as well as having a natural ordering, in addition to the dependent variable not fulfilling the requirements to be treated as continuous, or which it would need to have at least 5 categories, the chosen statistical model is an Ordinal Logistic one.

As discussed in the previous section, a wide variety of variables are linked to better/worse perceptions of female politicians and candidates. These will have to be included as control variables to isolate as much as possible the effect of social media, and reduce the potential of observing a confounded relationship. Firstly, some general demographic factors such as age, education level, economic well-being, and respondent's gender will be accounted for as confounders. Age is found to be correlated both to use of social media (younger voters use

social media more) and also openness to women in politics (Campbell et al., 2009, p. 193; Inglehart & Norris, 2009, p. 7; Fernandez & Valiente, 2021, p. 522; Dolan, 2010, p. 76). Individuals with higher levels of education are also found to view women in politics more positively than less educated individuals (Inglehart & Norris, 2009, p. 7; Fernandez & Valiente, 2021, p. 522; Dolan, 2010, p. 76). Through a series of mechanisms, individuals of higher economic backgrounds are expected to be more open to women in politics, but also have more access to education and social media (Inglehart & Norris, 2009, p. 7; Fernandez & Valiente, 2021, p. 522; Dolan, 2010, p. 76). As a result, it is crucial to include age, education and economic status as a control, as it may be responsible for changes in both the dependent, and the independent variable. Respondent's sex, as previously mentioned, is important to the extent that voters tend to see in a positive light and support candidates they identify with, making women more likely to view other women positively (Dolan, 2008) .

As mentioned, the WVS collects data across 66 countries, though only 58 are included in the final sample of this study. e This diversity of responses can be seen as an advantage in trying to extend research on the effects of media usage on opinions of female political candidates beyond what is currently available, but the geographically clustered nature of this data can bring about issues when it comes to the assumption of independent and equally distributed errors which can give 'false-positive' correlation results, or in other words type-1 errors. B. Countries are then included as control variables, in order to be able to cluster standard errors and do country fixed effects, avoiding inferential issues arising from clustered data.

Beyond these broader and basic demographic factors, additional factors could also confound the relationship under analysis, and must therefore be included as controls. Interest in politics is one of these. Individuals with higher interests in politics may actively seek political content and engage more critically with this content compared to individuals who

are not interested in politics, thus being more exposed to political content, but also potentially filtering out information more (filter bubble effects). Such individuals might also be better able to fact-check suspicious information they come across. Various studies find a link between individuals' openness to women in political positions and general political ideology . Women are more aligned (or at least perceived to be) with the left/democratic side of the spectrum (Lawless & Hayes, 2015). Individuals aligned with the political right may therefore undervalue women due to their political values, but also because they are perceived to be more liberal, even within the right (Bligh et al., 2011) As a result, political ideology is included as a control. Having accounted for all variables, potential confounders and issues regarding the dataset, the next section will follow a step-by-step account of the statistical analysis conducted.

Results

An Ordinal Logistic Regression was conducted to test the hypotheses put forward in the previous section, the outcomes are presented in Table 2. While the negative coefficient of the social media predictor variable (indicating less agreement), and the positive coefficients of all traditional media variables (indicating more agreement) seem to support hypotheses one and three, these results are on the log of the odds scale and don't effectively communicate the true effect of social (and traditional) media on the perceptions of women in politics. Consequently, this first set of results do not provide sufficient information to provide a concise answer to the research question. This section aims to generate a clearer picture of media effects on perceptions of women in politics, using Marginal Effects at the Mean (MEM), and predicted probabilities of agreement with the statement across all categories of media, and their frequencies of uses.

Table 3 Ordinal Logistic Regression: Changing Perception of Female Political Leaders

<i>Social Media Use</i>	-0,027***
	(0,008)
Daily Newspaper Use	0,020*
	(0,009)
TV news	0.002
	(0,014)
Radio News Use	0,030**
	(0,010)
Left-Right scale	0,061***
	(0,018)
Age	0.001
	(0,001)
Gender	-0,570***
	(0,045)
Education	-0,096***
	(0,009)
Economic Status	-0,004
	(0,008)
Interest in Politics	0,033
	(0,022)
Num.Obs.	59671

Std.Errors	by: Country
p < 0,1, * p < 0,05, ** p < 0,01, *** p < 0,001	
Notes: Ordinal Logistic Regression output with standard errors in parentheses.	
Country fixed effects omitted for clarity and included in Appendix 1	

Hypothesis 1

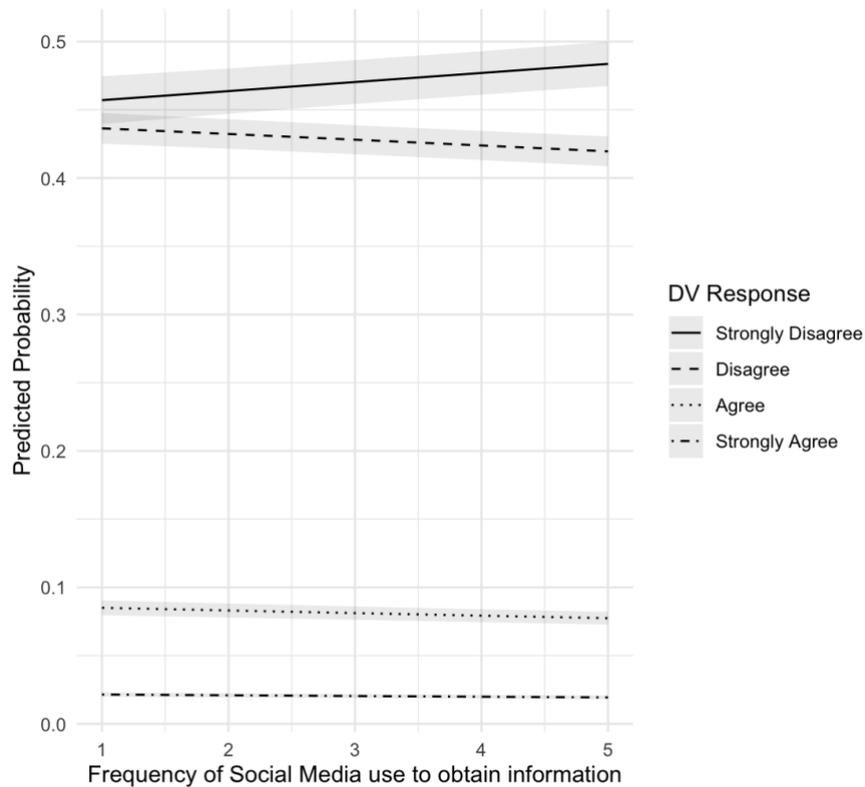
The first hypothesis focuses on the effect of the main predictor variable, social media use for information and predicts a positive effect on perceptions of women, shown by lower agreement with the statement that men make better political leaders than women, as social media use increases. Following hypothesis 1, we expect to see a positive effect on the predicted probabilities of disagreement, and strong disagreement, and a decreasing predicted probability of agreeing, and strongly agreeing as this would be consistent with better perceptions of women. Figure 1, shows the predicted probabilities of respondents answering in each category of the dependent variable, given their reported use of social media.

For the “strongly disagree” response, a positive relationship is observed indicating that as social media use increases, the predicted probability of individuals reporting to strongly disagree with the statement also increases, this result is statistically significant (MEM = 0,666%, CI = 0,409% : 0,922%). Looking at the “disagree” category, the line is downward sloping, this indicates that as social media use increases, the predicted probability that an individual disagrees with the statement falls, this result is also statistically significant (MEM = -0,424%, CI = -0,588% : -0,261%). This result, while negative, does not necessarily contradict the first hypothesis. This is because the decline in predicted probabilities of disagreement are not matched by an increase in the predicted probabilities in either agreement category. Recall from the descriptive statistics table (Table 1) that

respondents, on average, do tend to disagree with the statement that men make better political leaders than women do, as a result a decrease in the “disagree” category, matched with an increase in the “strongly disagree” category indicates a shift to more positive perceptions of women. Furthermore, the negative effect of increased use of social media on the predicted probabilities of agreeing and strongly agreeing lend further support to the first hypothesis. The downward sloping nature of both lines indicates that as social media use increases, the predicted probabilities of both levels of agreement fall. Both results are statistically significant, but minimal (‘agree’ MEM = -0,189%, CI = -0,264% : -0,114%; ‘strongly agree’ MEM = -0,053%, CI = -0,073%: -0,032%).

Evidently, the effect size is far larger amongst both categories of disagreement, nevertheless these are also the categories where most individuals fall into as shown by the descriptive statistics. This indicates that social media, fortifies positive opinions of women, as individuals become more likely to strongly disagree with the statement, as opposed to simply disagreeing. Agreement and strong disagreement also become less likely to agree. Given the statistical significance of all effects, while they are not very big, there is not sufficient evidence to reject the first hypothesis.

Figure 1: Predicted probability of agreeing with “Men make better political leaders than women” at different levels of social media use.



Note: Table shows predicted probabilities of responding within each category of agreement to the statement, at a 95% confidence interval (shaded area)

Hypothesis 2:

Hypothesis 2 focuses on traditional media, and predicts a negative effect on perceptions of women in politics as frequency of traditional media use increases. Figures 2, 3 and 4 graphically depict the predicted probabilities of each category of agreement, the three traditional media sources, Daily Newspaper, TV news, and Radio across the three sources of traditional media, individuals Strongly Disagree, disagree, agree or strongly agree to men making better political leaders than women do.

Figure 2 (Daily Newspaper use) shows trends consistent with this hypothesis. The line depicting strong disagreement, is downward sloping indicating a lower predicted probability of strongly disagreeing with the statement, as frequency of daily newspaper use increases.

The effect is statistically significant, but quite small (MEM = -0,492, CI = -0,768 : -0,215) .

However, predicted probabilities ‘disagreeing’, although minimally, increase (MEM = 0,

313, CI = 0, 139 : 0,488) The bottom two slopes, depicting agree (MEM = 0,139, CI =0,056 : 0,223) and strongly agree respectively (MEM = 0,039, CI = 0,019 : 0,59) are slightly upward sloping. Both results are statistically significant, but minimally. These results, indicate that while newspaper use does not lead to negative opinions of women becoming more likely than positive opinions (would be shown by a larger predicted probability/positive effect of use on the agree and strongly agree categories), increased use does have a negative effect on strong disagreement, and a positive one on both agreement categories, even if minimal.

Figure 2: Predicted probability of agreeing with “Men make better political leaders than women” at different levels of social media use.

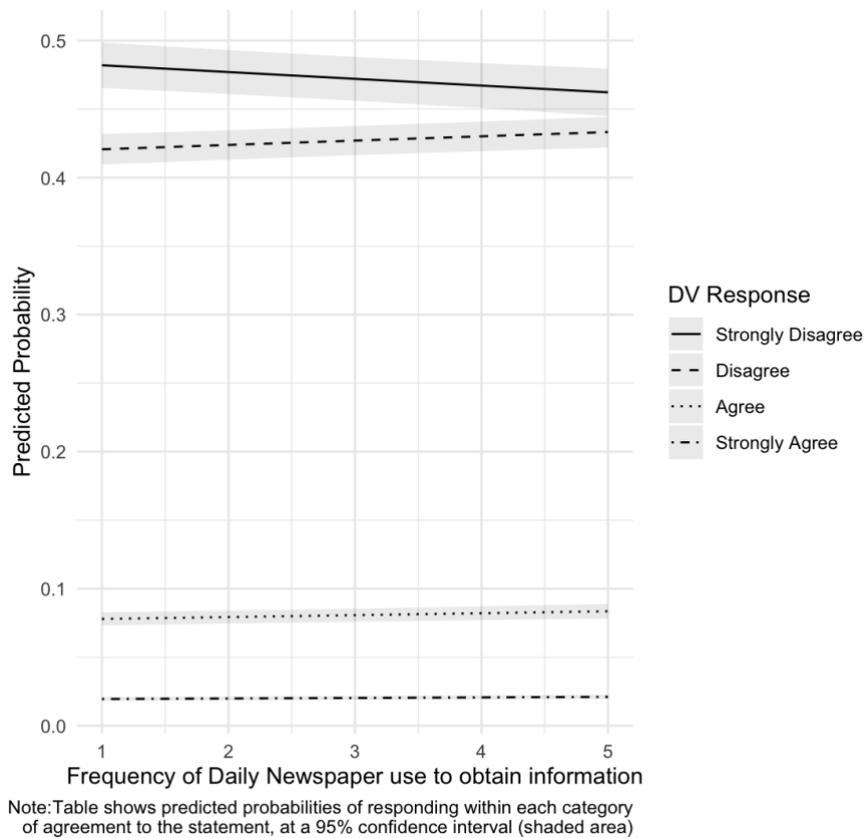
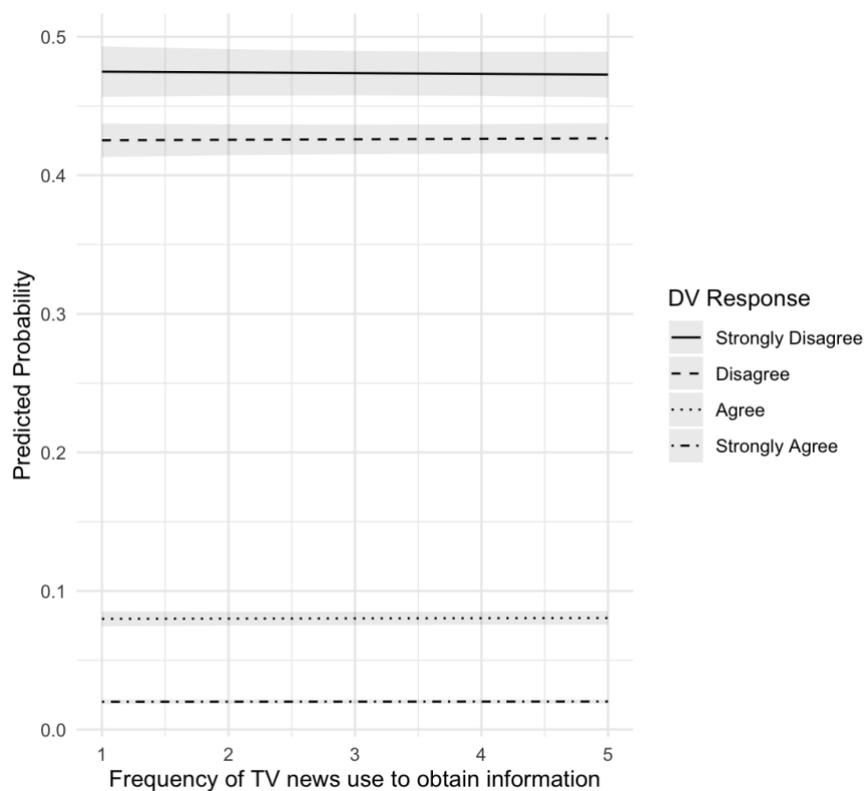


Figure 3 (TV news use), shows trends inconsistent with the predictions of hypothesis 3 insofar as it seems that there is no effect at all. As shown in figure 3, all slopes are essentially nil across all categories of agreement with the statement. Across the Strongly Agree category, a very small negative effect is observed, as frequency of TV use for information increases; however this result is not statistically significant (MEM = -0,053, CI = -0,387: 0,281). An even smaller, but positive, effect of increased use exists within the disagree category, but again this is not statistically significant (MEM = 0,034, CI = - 0,174 : 0,241). The likelihood of agreeing increases but very minimally (MEM = 0,015, CI = 0,082; 0,112), as does the likelihood of strongly disagreeing, also not statistically significant (MEM = 0,004, CI = 0,026: 0,034). Then, based on the predicted probabilities plots, and the EMEs

calculated with TV news use as a predictor variable, we fail to reject a null relationship between TV news and perceptions of women in politics. Here, the hypothesised negative relationship presented by hypothesis 3 does not hold.

Figure 3: Predicted probability of agreeing with “Men make better political leaders than women” at different levels of TV news use.

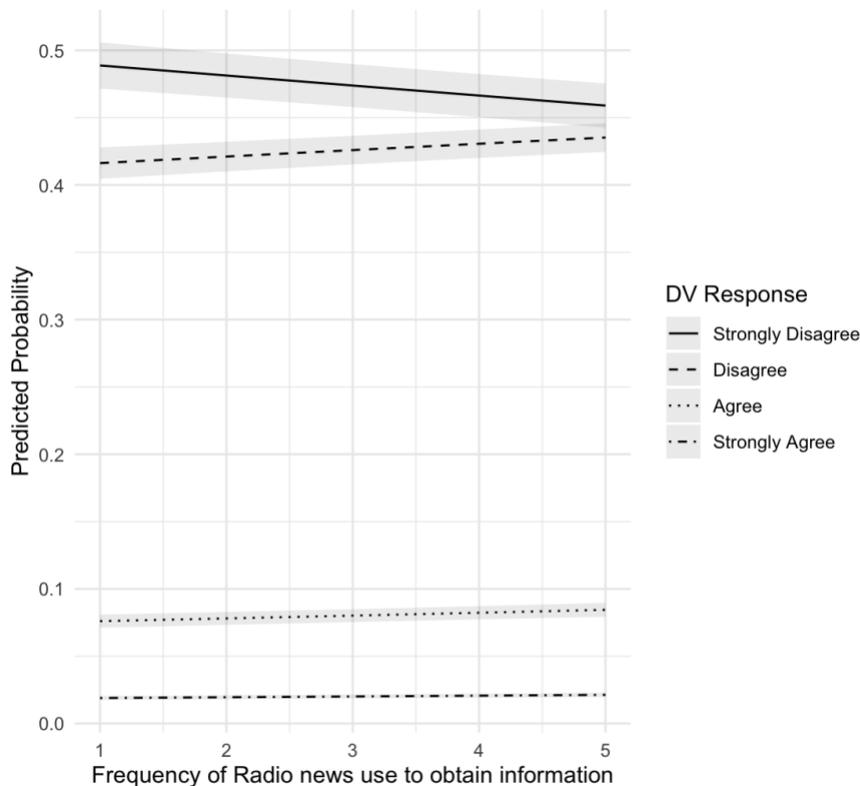


Note: Table shows predicted probabilities of responding within each category of agreement to the statement, at a 95% confidence interval (shaded area)

Figure 4 (radio news) shows trends more consistent with those of figure 2, and hypothesis 3. While the line plotting the predicted probability of strong disagreement is downward sloping (MEM = -0,745, CI = -1,00 : -0,485), the line plotting disagreement has a slightly positive (upward) slope, indicating an increase in the predicted probabilities of disagreeing with the statement (MEM = 0.475, CI = 0.306 : 0.643). A very slight increase in

the predicted probabilities to agree with the statement is observable (MEM = 0,211, CI = 0,138 : 0,284), as well as an even smaller positive effect on the predicted probability of strongly agreeing (MEM = 0,059, CI = 0,038 : 0,080). As shown by the confidence intervals, all of these results are statistically significant. On the basis of these results, increased radio use does not lead to negative opinions of women in politics (agreement with the statement) becoming more likely than positive opinions (disagreement with the statement). Still, a small increase in the predicted probability of agreeing (at both levels) exists. Similarly to increased newspapers, there does seem to be a lesser likelihood of strongly disagreeing the more this type of media is used, and an increase in the probability of disagreeing, agreeing, and strongly agreeing. As a result, looking only at radio as a source of information, an increased frequency of its use seems to be linked to less positive perceptions of women, but not outright negative ones.

Figure 4: Predicted probability of agreeing with “Men make better political leaders than women” at different levels of radio use.



Note: Table shows predicted probabilities of responding within each category of agreement to the statement, at a 95% confidence interval (shaded area)

Overall, there is mixed evidence for the third hypothesis. While all components of traditional media indicated a decrease in the predicted probability of strongly disagreeing with the statement, all seem to increase disagreement, agreement and strong agreement, although the effect across the agree and strongly agree is far smaller. Furthermore, the predicted probability of strong disagreement, while in decline, still remains the highest, indicating that individuals are still more likely to strongly disagree with the statement that men make better political leaders than women. Additionally, only the effects of Daily News and Radio are statistically significant. In summary, while traditional media use does not seem to substantially increase *negative* perceptions of women in politics, it does seem to be connected to a less positive perception, as well as a greater potential for developing negative

opinions compared to social media. As a result, when comparing the effects of social media use, to those of traditional media, we fail to reject the hypothesis that traditional media leads to less positive perceptions of women, even traditional media cannot be expected to lead to outright negative opinions in the form of agreement with the statement that men make better political leaders than women.

The predicted probabilities used to create these plots, included social media at its mean use of 3.71, this is closest to the 4th category, which corresponds to weekly use of social media. Given the positive effect social media use has on strong disagreement (positive effect on the perceptions of women) and the negative effects it has on all other categories of agreement (which indicate less positive, and negative perceptions), the high level of social media use included in the calculation of predicted probabilities given a level of traditional media use may have been altered. That is the negative effect on strong disagreement may have been reduced, and positive effect traditional media sources have on disagreement, agreement and strong agreement may have been made smaller. The opposite can be said about the effect of social media, given that the level at which traditional media is controlled for is also amongst the highest frequencies of use.

To better understand this dynamic, predicted probabilities were calculated at a maximum use of traditional media (5 = daily) as well as the minimum (1 = never). The predicted probabilities are presented in table 3. As expected, high traditional media use leads to lower predicted probabilities of strong agreement compared to when social traditional media use is low. For instance, the predicted probabilities of strong agreement when social media use is “never” and traditional media use is “daily” = 0.45, as social media use becomes more frequent, this predicted probability rises to 0.46 when social media is also used daily. On the other hand, when both traditional media and social media are at their minimum use, the predicted probability of strong disagreement is 0.50, indicating that traditional media has

a negative effect on the perceptions of women in politics. Accordingly, when social media rises to the maximum frequency, but traditional media use stays minimal, the predicted probability of strong agreement = 0.528. This lends further support to hypotheses 1 and 3. Social media has a positive effect on strong disagreement, indicating that social media is more conducive to strongly egalitarian attitude formation. While again traditional media does not make negative opinions of women more likely than positive ones its use does correlate to a weakening in positive opinions, and a slight increase in negative opinions (agreement with the statement).

Table 4: Comparison of predicted probabilities at each frequency of Social Media use, with fixed frequency of Traditional Media measures at mean, minimum, and maximum

SM	DV	Predicted TM = mean	Predicted TM= 1	Predicted TM = 5
1	1	45,71%	50,17%	45,01%
2	1	46,37%	50,83%	45,67%
3	1	47,04%	51,50%	46,33%
4	1	47,70%	52,17%	47,00%
5	1	48,37%	52,83%	47,66%
1	2	43,64%	40,77%	44,07%
2	2	43,23%	40,32%	43,67%
3	2	42,81%	39,87%	43,25%
4	2	42,39%	39,41%	42,84%
5	2	41,96%	38,95%	42,41%

1	3	8,50%	7,26%	8,71%
2	3	8,31%	7,09%	8,51%
3	3	8,11%	6,92%	8,32%
4	3	7,93%	6,76%	8,13%
5	3	7,74%	6,60%	7,94%
1	4	2,15%	1,80%	2,21%
2	4	2,09%	1,76%	2,15%
3	4	2,04%	1,71%	2,10%
4	4	1,99%	1,67%	2,04%
5	4	1,93%	1,62%	1,99%

Discussion and Conclusion

Discussion

This study set out to explore the effect of social media as a source of information on the perceptions of women in politics, given contradictory expectations originating from its nature. Using survey data from the 7th wave of the WVS, an Ordinal Logistic Regression model was conducted. The results of social media's effects are clear, and portray an optimistic picture. Social media use is indeed associated with more strongly positive opinions of women in politics, denoted by a decrease in the predicted probabilities of responding within the "disagree" category, and both agreement categories in exchange for an increase in the 'strongly disagree' category, indicating a decreased likelihood of forming negative opinions (denoted by agreement), and not an increase in the likelihood of having only positive opinion, but strongly positive (denoted by disagreement). The opposite results are observed across traditional media. These results seem to suggest that the negative effects

social media could have on voters' opinions of women as denoted by those advocating for the spread of misinformation and fake news, as well as image-damaging filter bubbles and echo chambers don't materialise in actuality. It seems more plausible that social media promotes egalitarian views in being a platform where women can self advocate, generating more role-congruent images of themselves, as well as gaining more visibility and thus better opinions about them, as suggested by Kleinnijenhuisen (2019)

Traditional media seems to not reinforce gender stereotypes as much as was initially expected. While the predicted decrease in the predicted probabilities of strong disagreement, and an increase in the predicted probabilities of agreement and strong agreement, strong agreement remains the category with the highest predicted probability. As a result, while traditional media does seem to generate less positive opinions compared to social media (following agenda setting, framing and role congruity theory), this effect does not seem to be strong enough to generate outright negative opinions of women in politics (denoted by agreement). Instead, traditional media seems to reduce the positivity of opinions, rather than rendering them negative all together. This is perhaps aligned with Bauer (2016)'s findings, claiming that gendered representation of women make individuals perceive women as being fit for those political appointments which are congruent with their stereotyped characteristics, therefore reducing strongly positive opinions which may identify a belief that women are as suited as men in all areas of politics, but reinforcing milder agreement, which could indicate beliefs that women are not necessarily less qualified than men, but only in some areas.

What is most important however, and indeed the key contribution of this work, is that social media in challenging gender stereotypes, seems to promote more positive perceptions of women, as well as partly combat the more negative effects associated with traditional media use. This has the implication that social media may promote progressive and egalitarian views in such a way that furthers representation more strongly than traditional media, and can

be used by women to receive greater visibility and better evaluations. Furthermore, some studies suggest that in being exposed to less stereotyped coverage of other women, women's ambition to political office rises (Hayes & Lawless, 2015; Pruyers & Blais, 2017). This indicated that social media could also encourage women to overcome the barriers they face from early childhood. This research highlights the importance and utility of social media for women to receive more just coverage and generate more strongly positive perceptions, while circumventing some of the negative effects posed by traditional media. This is especially relevant and promising for women's representation as social media gains popularity as an informational source and electoral battleground.

Limitations and The Future

Understanding the nature of these findings also calls for an assessment of the study's limitations. A first limitation revolves around the measurement of the dependent variable, perceptions of women. As explained in the research design section, this categorical variable had as possible answers "strongly disagree" "disagree" "agree" and "strongly agree" but lacks a neutral category. While agreement and strong agreement are for the most part self-explanatory, the same cannot be said about the two disagreement categories. Without any further information of what exactly each category entails, if one mirrors the responses, it can be understood that "strong disagreement" indicates that an individual believes that women are better than men. While respondents may have interpreted this result 'correctly', it does leave some interpretational fuzziness. The descriptive statistics show that most respondents fall within the two middle categories, so the inclusion of a midway category may allow for more detailed inferences to be made.

In addition, WVSs are conducted only once per wave (WVS, 2024), this is a limitation as it becomes impossible to track changes in an individuals' perceptions given exposure to social media. As a result, the findings of these studies only indicate correlation rather than systematically indicating that social media generates positive perceptions of women. This is an avenue future research can explore, through the conduction of a longitudinal study, measuring effective changes in opinions after exposure to traditional, social media within individuals with and without strong prior opinions. This will further the understanding of how social media impacts perceptions of women in politics. An additional improvement to be made upon the measurements of the WVS, which would enhance its utility for this particular area of research, would be to generate more detailed response categories for the dependent variable, to include policy-area specificity (e.g men are better than women, but only in some policy areas). This will allow for a clear analysis and understanding of social and traditional media's impact on voters' perception of women. In addition, through a more nuanced understanding of media effects on perceptions of women, more targeted countermeasures can be developed to combat the barriers to women's equal representation in politics. At the same time, it will be important to explore other avenues of causality beyond evaluation, when it comes to the voting of women, given that these are still low.

Closing Remarks

In conclusion, this study contributes to literature in several important ways. Firstly, these findings begin to bridge the gap in literature, on the effects and utility of social media for political purposes in the digital age, particularly with regards to equal gender representation, furthering the understanding of media effects on public opinion in the digital age. The findings suggest that social media can contribute to more gender progressive views in the field of politics, leaving an optimistic outlook of a shift to social media for political debate, contrary to what some scholars predict. Still, the positive effects do not exclude the

existence of disinformation, fake news and echo chambers. As a result, to prevent negative effects from generating, and to maximise the positive effect potential of social media as it becomes more and more popular as a site of political discourse, it will be important that some level of regulation is applied, at least in terms of the factuality of information. While the freedom of access and the networked nature of social media should be preserved, more control on the accuracy of information shared will enhance the utility of social media as a political platform, as well as enhancing its utility as a vehicle for women to pursue political success. Ultimately, social media has great potential to offer a more equitable for women.

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Appendix 1: Assumptions Tests

Appendix 1.1 multicollinearity

In order to carry out an ordinal logistic regression, the assumption of no excessive multicollinearity must be met. Table A1 depicts the vif values for each of the variables, dependent, independent and controls. Given that none of the Vif scores is above 5, and they circle around 1 instead, the assumption of no excessive multicollinearity is met.

Table A.1.1: Multicollinearity

Variable	Vif	Df	adj. Vif
Social Media Use	1,462	1	1,209
Daily Newspaper use	1,388	1	1,178
TV news	1,283	1	1,133
Radio use	1,321	1	1,149
Left-right	1,062	1	1,030
Age	1,506	1	1,227
Sex	1,040	1	1,020
Education	1,469	1	1,212
Economic status	1,166	1	1,080
Interest in politics	1,208	1	1,099
Country factor	3,095	50	1,011

Proportional Odds Assumption

Another assumption which must be met in order to carry out an Ordinal Logistic Regression, is that of proportional odds. Initially, a brant test was carried out but was contradicted, indicating a failure to meet this assumption. However this is common within large datasets. As a result, adjusted odds ratios were compared. As a result of the similitude between

comparisons, the proportional odds assumption is met, contrary to what the brant test indicated.

Table A1.2: Proportional odds

Variable	Ordinal	Binary 1	Binary 2	Binary 3
Social Media Use	0,974	0,990	0,949	0,979
Daily Newspaper Use	1,020	1,008	1,032	1,020
TV news	1,002	1,054	0,973	0,949
Radio News Use	1,030	1,030	1,037	1,034
Left-Right scale	1,063	1,071	1,060	1,037
Age	1,038	1,106	0,993	0,961
gender	1,767	1,900	1,768	1,654
education	0,910	0,909	0,905	0,922
economic status	0,999	0,988	1,000	1,009
Interest in Politics	1,034	0,947	1,059	1,164
Argentina	1,648	1,397	2,170	1,485
Bangladesh	13,077	9,262	14,696	10,873
Armenia	12,452	8,730	13,777	12,184
Bolivia	3,753	6,395	2,808	1,583
Brazil	2,682	3,349	2,196	1,263
Canada	1,447	1,357	1,947	1,381

Chile	3,972	3,462	4,674	2,781
ROC Taiwan	4,169	5,580	3,745	1,116
Colombia	4,026	7,665	2,996	2,313
Cyprus	5,621	4,820	6,891	3,735
Ecuador	6,928	4,707	8,990	4,714
Ecuador	3,576	4,430	3,036	2,889
Ethiopia	4,757	3,072	5,135	6,750
Germany	1,046	1,156	0,818	0,446
Greece	3,006	2,729	3,406	1,976
Guatemala	2,771	2,899	2,757	2,286
Hong Kong SAR	4,804	9,110	3,910	2,115
India	10,882	3,893	12,153	13,098
Indonesia	17,050	17,206	21,040	12,130
Japan	4,055	4,474	4,396	1,045
Kenya	6,115	3,637	6,881	8,432
South Korea	10,628	18,373	12,050	5,476
Libya	39,069	17,570	33,617	35,258
Macao SAR	6,049	10,263	5,641	2,460
Malaysia	12,129	8,302	13,730	9,945
Maldives	9,490	5,487	10,461	10,579
Mexico	2,656	2,248	3,066	3,303
Mongolia	8,992	7,053	10,679	6,771
Morocco	7,147	6,382	7,081	8,004

Netherlands	0,916	0,947	0,758	0,430
Nicaragua	1,114	1,245	0,729	0,516
Nigeria	4,872	14,582	3,636	2,012
Nigeria	33,536	10,727	27,260	29,117
Peru	2,433	3,228	1,737	1,211
Philippines	9,780	17,937	10,049	6,900
Puerto Rico	1,030	0,892	1,536	1,672
Romania	4,906	2,605	6,744	7,140
Russia	14,609	11,871	16,139	11,491
Serbia	4,075	3,167	5,260	3,716
Singapore	5,110	7,387	4,913	1,944
Slovakia	7,574	4,502	9,318	7,162
Zimbabwe	6,148	4,658	6,440	5,981
Tajikistan	29,741	7,386	27,859	29,545
Thailand	6,651	4,951	7,787	5,315
Tunisia	13,991	7,075	13,515	16,673
Turkey	8,619	6,588	10,679	5,797
Ukraine	10,478	9,426	12,758	5,941
United States	2,103	2,293	1,958	1,420
Uruguay	2,244	3,259	1,021	0,719
Venezuela	3,012	2,685	3,258	3,632

Appendix 2: Control Variables

- Two questions from the WVS are useful to control for age: Q261 and Q262, which ask about the year of birth and age of individuals, respectively (World Values Survey, 2024, p. 18), as Q262 is more straightforward, it will be used to account for the age of respondents.
- Individuals with higher levels of education are also found to view women in politics more positively than less educated individuals (Inglehart & Norris, 2009, p. 7; Fernandez & Valiente, 2021, p. 522; Dolan, 2010, p. 76). I will be using question 275, which asks respondents, "what is the highest educational level that you [...] have attained?" where respondents can select from 8 options which range from no education, to doctoral degrees (World Values Survey, 2024, p. 19)
- Economic background should also be included as a control variable as through a series of mechanisms, individuals of higher economic backgrounds are expected to be more open to women in politics (Inglehart & Norris, 2009, p. 7; Fernandez & Valiente, 2021, p. 522; Dolan, 2010, p. 76). The WVS has two potential measures for this variable, Q287 asks respondents to select a "class" they identify with, from upper, to upper middle, lower middle, working or lower class (WVS, 2024, p. 21), while Q288, asks individuals to rank their households on a scale from 1-10, as belonging to the lowest or highest income earners (p. 21). Given that social class is to some extent up for interpretation, and may be linked to different outcomes in different countries, the second measure asking individuals to rank their household income is chosen.
- What is particularly relevant for this research, is the very nature of the WVS dataset. Again, the WVS dataset, survey's respondents across 66 countries (WVS, 2024). While this diversity of responses can be seen as an advantage in trying to extend

research on the effects of media usage on opinions of female political candidates beyond the USA, the geographically clustered nature of this data can bring about issues when it comes to the assumption of independent and equally distributed errors, which can give ‘false-positive’ correlation results, or in other words type-1 errors.

B also to some extent up for interpretation, given that there are

- The sex of respondents is measured by Question 260, respondents' sex is recorded as a binary variable (1=male and 2=female), and it is based on the interviewer's perception of the interviewee (p. 18).
- Interest in politics should be controlled because individuals with higher interests in politics may actively seek political content as well as possibly engaging more critically with this content more so than individuals who are not interested in politics, as well as possibly being better able to fact-check suspicious information they come across. Question 199 asks survey respondents to rank their interest in politics from "very interested" to "not at all" (p. 14).
- Q240 asks respondents to place their political views on a scale from 1 (left) to 10 (right) thereby somewhat accurately measuring this potential confounder, though what each number on the scale means in practice, is up to each individual respondent to determine.
- Going back to the dependent variable of social media use for information and the dependent variables, two additional sources were listed; phone and internet. These were however not included in the model, as they do not provide sufficient clarity as to what exactly an individual is doing. For instance, an individual that selects “phone” could be using social media on their phone, as well as read from online newspapers, online connection to the radio, online broadcasting etc. The “internet” category gives

rise to the same ambiguity. To avoid confounding results, these variables were not included.

Appendix 3: Full model

Table A1: Log of the Odds model

Variable	Log of The odds
Social Media Use	-0.027***
	(0.005)
Daily Newspaper Use	0.020***
	(0.006)
TV news	0.002
	(0.007)
Radio News Use	0.030***
	(0.005)
Left-Right scale	0.061***
	(0.003)
Age	0.001*
	(0.001)
female	0.570***
	(0.016)
education	-0.096***
	(0.005)

economic status	-0.004
	(0.004)
Interest in Politics	0.033***
	(0.009)
Bangladesh	2.572***
	(0.092)
Armenia	2.523***
	(0.105)
Bolivia	1.322***
	(0.083)
Brazil	0.997***
	(0.091)
Canada	0.368***
	(0.076)
Chile	1.385***
	(0.102)
Colombia	1.396***
	(0.084)
Cyprus	1.723***
	(0.106)
Czechia	1.932***
	(0.090)
Ecuador	1.271***
	(0.090)

Ethiopia	1.558***
	(0.111)
Germany	0.037
	(0.087)
Greece	1.101***
	(0.095)
Guatemala	1.015***
	(0.090)
Hong Kong SAR	1.569***
	(0.081)
India	2.385***
	(0.094)
Indonesia	2.837***
	(0.080)
Japan	1.402***
	(0.099)
Kenya	1.812***
	(0.093)
South Korea	2.360***
	(0.087)
Libya	3.663***
	(0.093)
Macao SAR	1.803***
	(0.095)

Malasya	2.489***
	(0.087)
Maldives	2.249***
	(0.094)
Mexico	0.974***
	(0.085)
Mongolia	2.193***
	(0.084)
Morocco	1.964***
	(0.090)
Netherlands	-0.089
	(0.089)
New Zealand	0.107
	(0.107)
Nicaragua	1.587***
	(0.093)
Nigeria	3.519***
	(0.093)
Peru	0.892***
	(0.088)
Philippines	2.278***
	(0.088)
Puerto Rico	0.031
	(0.094)

Romania	1.588***
	(0.104)
Russia	2.680***
	(0.091)
Serbia	1.404***
	(0.098)
Singapore	1.635***
	(0.082)
Slovakia	2.026***
	(0.092)
Zimbabwe	1.814***
	(0.093)
Tajikistan	3.388***
	(0.091)
Thailand	1.893***
	(0.093)
Tunisia	2.637***
	(0.095)
Turkey	2.151***
	(0.082)
Ukraine	2.357***
	(0.107)
United States	0.743***
	(0.080)

Uruguay	0.810***
	(0.096)
Venezuela	1.111***
	(0.090)
Num.Obs.	59671
<ul style="list-style-type: none"> · $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ · Table depicting the log of the odds coefficients for IVs and Controls 	

Appendix 4 : Predicted Probabilities and Marginal Effects

Table A4.1 Predicted Probabilities Social Media

IV Category	DV Response	estimate	std.error	CI = Low	CI = High
1	1	45,709%	0,008908415	43,963%	47,455%
2	1	46,372%	0,008455347	44,715%	48,029%
3	1	47,037%	0,008183197	45,433%	48,641%
4	1	47,703%	0,008113019	46,113%	49,293%
5	1	48,369%	0,008251875	46,752%	49,986%
1	2	43,642%	0,005724362	42,520%	44,764%
2	2	43,230%	0,005518434	42,148%	44,311%
3	2	42,811%	0,005412589	41,751%	43,872%
4	2	42,387%	0,005424595	41,323%	43,450%
5	2	41,956%	0,005564544	40,865%	43,047%

1	3	8,502%	0,002778049	7,958%	9,047%
2	3	8,306%	0,002593669	7,798%	8,815%
3	3	8,114%	0,002466269	7,631%	8,598%
4	3	7,926%	0,002397395	7,456%	8,396%
5	3	7,741%	0,002384998	7,274%	8,209%
1	4	2,147%	0,000824695	1,985%	2,308%
2	4	2,091%	0,000769571	1,941%	2,242%
3	4	2,037%	0,000730448	1,894%	2,181%
4	4	1,985%	0,000707303	1,846%	2,123%
5	4	1,934%	0,00069926	1,796%	2,071%

Table A4.2 Predicted Probabilities IV = Daily Newspaper

Social Media = 3,14; TV News = 4,18; Radio = 3,10

IV Category	DV Response	estimate	std.error	CI = Low	CI = High
1	1	48,199%	0,00841967	46,549%	49,849%
2	1	47,704%	0,00816285	46,104%	49,304%
3	1	47,210%	0,00814423	45,614%	48,806%
4	1	46,716%	0,00836398	45,077%	48,356%
5	1	46,223%	0,00880241	44,498%	47,949%
1	2	42,066%	0,00565524	40,957%	43,174%
2	2	42,385%	0,00545515	41,316%	43,454%
3	2	42,701%	0,00540319	41,642%	43,760%
4	2	43,013%	0,00549433	41,936%	44,090%
5	2	43,322%	0,00571236	42,202%	44,442%

1	3	7,789%	0,00244158	7,310%	8,267%
2	3	7,926%	0,00241067	7,453%	8,398%
3	3	8,065%	0,00244262	7,587%	8,544%
4	3	8,207%	0,00254067	7,709%	8,705%
5	3	8,351%	0,00270311	7,821%	8,880%
1	4	1,947%	0,00071541	1,807%	2,087%
2	4	1,985%	0,00071087	1,846%	2,124%
3	4	2,024%	0,00072295	1,882%	2,166%
4	4	2,064%	0,00075275	1,916%	2,211%
5	4	2,104%	0,0008002	1,947%	2,261%

Social Media = 3,14; TV News = 4,18; Radio = 3,10

Table A4.3:

Predicted Probabilities IV = TV News

IV Category	DV Response	estimate	std.error	CI = Low	CI = High
1	1	47,481%	0,00929573	45,659%	49,303%
2	1	47,428%	0,00858164	45,746%	49,110%
3	1	47,374%	0,00816833	45,773%	48,975%
4	1	47,321%	0,00810173	45,733%	48,909%
5	1	47,268%	0,00838986	45,623%	48,912%
1	2	42,529%	0,00613459	41,326%	43,731%
2	2	42,563%	0,00568906	41,448%	43,678%
3	2	42,597%	0,0054312	41,532%	43,661%
4	2	42,631%	0,00538652	41,575%	43,686%
5	2	42,665%	0,00555869	41,575%	43,754%

1	3	7,988%	0,00273378	7,452%	8,524%
2	3	8,003%	0,00254499	7,504%	8,502%
3	3	8,018%	0,00243743	7,541%	8,496%
4	3	8,033%	0,00242287	7,558%	8,508%
5	3	8,048%	0,00250385	7,558%	8,539%
1	4	2,002%	0,00079699	1,846%	2,158%
2	4	2,006%	0,00074749	1,860%	2,153%
3	4	2,011%	0,0007198	1,870%	2,152%
4	4	2,015%	0,00071676	1,874%	2,155%
5	4	2,019%	0,00073897	1,874%	2,164%

Social Media =3,41; Daily Newspaper = 2,81; Radio = 3,10

Table A4.4 Predicted Probabilities IV = Radio News

IV Category	DV Response	estimate	std.error	CI = Low	CI = High
2	1	48,131%	0,00834378	46,495%	49,766%
3	1	47,385%	0,00813812	45,790%	48,980%
4	1	46,641%	0,00814255	45,045%	48,237%
5	1	45,898%	0,0083545	44,261%	47,536%
1	2	41,624%	0,00591901	40,464%	42,784%
2	2	42,111%	0,00560305	41,012%	43,209%
3	2	42,590%	0,00541418	41,529%	43,651%
4	2	43,061%	0,00535407	42,012%	44,111%
5	2	43,525%	0,00541427	42,464%	44,586%
1	3	7,603%	0,00247443	7,118%	8,088%
2	3	7,807%	0,00242622	7,331%	8,282%

3	3	8,015%	0,00242766	7,539%	8,491%
4	3	8,228%	0,00248596	7,741%	8,715%
5	3	8,446%	0,00260478	7,936%	8,957%
1	4	1,895%	0,00071909	1,754%	2,036%
2	4	1,952%	0,00071177	1,812%	2,091%
3	4	2,010%	0,00071761	1,869%	2,150%
4	4	2,069%	0,00073873	1,925%	2,214%
5	4	2,131%	0,00077643	1,979%	2,283%

(Social media = 3.41; Daily Newspaper = 2.8; TV News = 4)

Table A4.5 Predicted Probabilities Social Media (fixed value of all Traditional Media = 5)

IV Category	DV Response	estimate	std.error	CI = Low	CI = High
1	1	50,165%	0,018460958	46,546%	53,783%
2	1	50,832%	0,0183241	47,241%	54,424%
3	1	51,499%	0,018275061	47,917%	55,081%
4	1	52,166%	0,018314305	48,576%	55,756%
5	1	52,832%	0,018440644	49,218%	56,446%
1	2	40,770%	0,012450795	38,330%	43,211%
2	2	40,321%	0,012484544	37,874%	42,768%
3	2	39,866%	0,012572112	37,402%	42,330%
4	2	39,408%	0,01271584	36,916%	41,900%
5	2	38,946%	0,012916817	36,414%	41,478%
1	3	7,263%	0,004838874	6,315%	8,211%

2	3	7,092%	0,004706693	6,169%	8,014%
3	3	6,924%	0,004600399	6,023%	7,826%
4	3	6,760%	0,004518636	5,875%	7,646%
5	3	6,600%	0,004459761	5,726%	7,474%
1	4	1,802%	0,001337895	1,540%	2,064%
2	4	1,755%	0,001295442	1,501%	2,009%
3	4	1,710%	0,001260441	1,463%	1,957%
4	4	1,666%	0,001232421	1,424%	1,907%
5	4	1,622%	0,001210833	1,385%	1,860%

Table A4.6 Predicted Probabilities Social Media (fixed value of all Traditional Media = 1)

IV Category	DV Response	estimate	std.error	CI = Low	CI = High
1	1	45,008%	0,017732018	41,532%	48,483%
2	1	45,670%	0,017547597	42,230%	49,109%
3	1	46,333%	0,017451789	42,912%	49,753%
4	1	46,997%	0,017447498	43,578%	50,417%
5	1	47,663%	0,017535836	44,226%	51,100%
1	2	44,071%	0,010887124	41,937%	46,205%
2	2	43,666%	0,010929483	41,524%	45,808%
3	2	43,254%	0,011018398	41,095%	45,414%
4	2	42,836%	0,011158337	40,649%	45,023%

5	2	42,412%	0,011352589	40,187%	44,637%
1	3	8,714%	0,005484917	7,639%	9,789%
2	3	8,514%	0,005311668	7,473%	9,555%
3	3	8,318%	0,005169936	7,305%	9,331%
4	3	8,126%	0,005058658	7,134%	9,117%
5	3	7,937%	0,004976324	6,962%	8,912%
1	4	2,207%	0,001581678	1,897%	2,517%
2	4	2,150%	0,001523418	1,852%	2,449%
3	4	2,095%	0,001474779	1,806%	2,384%
4	4	2,041%	0,00143528	1,759%	2,322%
5	4	1,988%	0,001404329	1,713%	2,263%

Table A4.7 Average marginal effects

Type of Media	Use Frequency	MEM Estimate	std.error	p.value	CI = Low	CI = High
Daily Newspaper	1	-0,492%	0,0014088	0,0004847	-0,768%	-0,215%
Daily Newspaper	2	0,313%	0,0008911	0,0004389	0,139%	0,488%
Daily Newspaper	3	0,139%	0,0004277	0,0011213	0,056%	0,223%
Daily Newspaper	4	0,039%	0,0001006	0,0001083	0,019%	0,059%
TV news	1	-0,053%	0,0017034	0,7543222	-0,387%	0,281%

TV news	2	0,034%	0,0010586	0,7482644	-0,174%	0,241%
TV news	3	0,015%	0,000493	0,7592129	-0,082%	0,112%
TV news	4	0,004%	0,0001527	0,7821186	-0,026%	0,034%
Radio	1	-0,745%	0,0013237	1,839E-08	-1,004%	-0,485%
Radio	2	0,475%	0,0008582	3,187E-08	0,306%	0,643%
Radio	3	0,211%	0,0003729	1,501E-08	0,138%	0,284%
Radio	4	0,059%	0,0001055	2,254E-08	0,038%	0,080%
Social Media	1	0,666%	0,0013101	3,758E-07	0,409%	0,922%
Social Media	2	-0,424%	0,0008341	3,667E-07	-0,588%	-0,261%
Social Media	3	-0,189%	0,0003826	8,136E-07	-0,264%	-0,114%
Social Media	4	-0,053%	0,0001041	4,094E-07	-0,073%	-0,032%