

Partisan Disagreement: The Role of Media, Personal Networks and Gender in Forming Political Preferences

Sumitra Badrinathan, Devesh Kapur, Deepaboli Chatterjee, Neelanjan Sircar

KEYWORDS: Gender and Politics, Political Behaviour, Media and Politics, Gender and Communication

1. Introduction

In modern democracies, widely available and diverse sources of information are thought to be critical for providing citizens with information that helps them form political preferences (Druckman, 2004), better exercise their franchise (Lassen, 2005), and hold elected officials accountable (Healy & Malhotra, 2013). We are particularly interested in understanding the conditions under which Indian women display political independence, i.e., have the opportunity to express political preferences that are different from the men in the household. Throughout this article, we focus on a key indicator of political independence of women: disagreement in political party preferences between men and women in the household. We call this behavior ‘intra-household partisan disagreement’.

India is an important test case in understanding the role of information sources in political preferences and partisan disagreement. The use of smartphones, which allow access to social media, is growing rapidly in India. According to industry estimates, there will be 820 million smartphones in the Indian market by 2022 (India Cellular & Electronics Association, 2020). This increased access to social media for all members of the household has the potential to attenuate disparities in access to information across the population, especially between men and women within the household. In India, smartphone ownership is uneven, while televisions are owned more widely. In particular, poorer households are less likely to be able to afford smartphones for individual household members, and lower levels of education limit use of newspapers and social media, which typically require a certain level of functional literacy. Furthermore, women in Indian households are likely to face barriers that limit individualised access to media, much as mobility is often restricted by patriarchal norms (Mehta and Sai, 2021). This points to the

important role of non-media sources of information, namely distinct personal networks with direct contact, in generating partisan disagreement.

Further, the political economy of social media in India, particularly the nexus between political parties and social media platforms, has the capacity to affect attitudes. While recent government pressures to censor dissent as well as the enactment of digital media laws that ask tech companies to comply with government surveillance have thrust this nexus into the limelight (Perrigo 2021), social media, particularly WhatsApp, has been used as a campaigning tool in India. These aspects could affect the level of trust that respondents have in media and, consequently, impact attitudes.¹

Much of the literature on information and political preferences focuses on Western contexts, which, when compared with India, exhibit high levels of functional literacy, fewer barriers to individualised media access, and diverse sources of media consumption. A focus on India affords us the opportunity to juxtapose and understand the gender biases in the consumption of mass media, social media, and non-media information, as well as how much various sources are related to intra-household partisan disagreement.

In this paper, we develop a simple theoretical framework to characterise how various information sources relate to political independence of women. Mass media, like television or newspapers, are ‘one-way’ passive sources of news information in which the receiver of information cannot discuss or interact with the news source. Social media and ‘non-media’ in-person interactions, are ‘two-way’ active sources of news information that allow for substantial discussion and argument between receivers of information and the source. In mass media, the source is not differentiated by person, as most of its consumption is publicly shared by members of the household. By contrast, if men and women have distinct personal networks and interaction in these networks is private, such two-way sources may plausibly generate political independence.

¹ Indeed, we find this in our data: respondents who support the Bharatiya Janata Party (BJP) are significantly more likely to trust the media; this effect persists after controlling for a range of demographics, including gender.

We apply these theoretical insights to a survey of more than 6,000 households in the urban clusters around the Indian cities of Patna and Dhanbad.² As cities situated within poorer states in India, this sample affords us the opportunity to examine a population with greater variation in educational outcomes and access to media, allowing for a more complete picture of the relative importance of media and non-media sources of information. In each household, the male primary wage earner (PWE) and a randomly selected working-age female were interviewed, allowing us to analyse intra-household gender inequalities. Our paper makes use of an extensive module on media consumption that was fielded to both the male and female respondents to characterise gender inequality in media access and its relationship to partisan disagreement.³

First, we show a significant gap between men and women for all types of media. Even after controlling for educational attainment, we find a 15 to 30 percentage point gap between men and women reporting any media source of news. We also show that education is significantly associated with a diverse media diet, as functional literacy is a requirement for engagement with newspapers and social media. Although levels of consumption are low, women who report having passed Class 10 do indeed engage more with social media than men who have not completed Class 10. Due to educational disparities by gender and other gender biases in media consumption, women almost exclusively report television as their news source (when they report a source).

Second, without individualised access to social media, we find that non-media personal networks play a key role in engendering partisan disagreement. In particular, we show that partisan disagreement is significantly more likely to be observed in state-level politics as opposed to national-level politics. This is consistent with the fact that personal networks are likely to be more local in nature and thus more impactful for state-level politics (which often depends on constituency-level issues). To offer confirmatory evidence of the relative impact of non-media private networks on political independence, we conduct a regression analysis of the correlates of

² Although the larger survey was conducted in four urban clusters—Dhanbad, Indore, Patna, and Varanasi—detailed media modules were only fielded in Patna and Dhanbad. Information about the sampling sites as well as sample characteristics and demographics is included in the appendix to the introduction article in this special issue.

³ More detail about the methodology, questionnaire and measures used throughout the survey appears in the methods note in the introduction article in this special issue.

partisan disagreement. We find that women who are employed, specifically in agriculture, and those women who visit others outside the home are significantly more likely to report partisan disagreement.

This paper makes three key contributions to the study of gender, media, and women's political independence. First, we believe this to be the first large-scale survey in the Indian context that provides a detailed analysis of the gender gap in media access and its relationship to intra-household partisan disagreement, linking India to a larger literature in comparative political behaviour and gender. Second, our study emphasises the importance of studying media and non-media sources of influence together in developing world contexts. This is a corrective to the existing literature, which typically addresses the relationship between media and preferences in contexts with higher levels of education and more diverse media diets. Finally, we show the methodological importance of surveying both men and women within a household separately in regard to political preferences in order to understand gender inequalities, partisan disagreement, and the variation therein.

The layout of the paper is as follows. Section 2 theorises different sources of public and private information—the former includes different types of media and the latter largely personal networks—and their likelihood of generating differentiation in preferences. Drawing from the survey data, Section 3 provides descriptive statistics on media consumption and intra-household differences by gender. Section 4 examines patterns of partisan disagreement between women in the household and the male PWE and factors that might explain these differences. Section 5 concludes with some prognostications on likely trends in private sources of information for women, their effects on intra-household differences in political preferences, and the possible effects of these differences on women's labour force participation.

2. Theory and Expectations

Due to patriarchal norms in the traditional Indian family structure, we are particularly interested in the conditions under which a woman in the household is willing to express a partisan preference that is different from that of the head of the household or the primary wage earner

(PWE) in the household. At the outset, we should clarify that there are several non-coercive reasons for similar partisan preferences in the household. This includes *jati* and caste-based homogamy and assortative mating that increases the likelihood that people with similar partisan preferences marry each other, the convergence of preferences due to cohabitation (Jennings & Stoker, 2005) or discussion and coordination in partisan preferences in the household (Jennings et al., 2009).

However, social conditions that may not be outwardly coercive (in terms of stated preferences) may still strongly shape the possibility of disagreement. A standard result in decision theory is that two individuals with the same set of existing 'prior' information will always agree (Aumann, 1976). For our purposes, this implies that we can only reasonably expect men and women to disagree on political preferences when they access substantially different pieces of information about the world, i.e., different 'private information'. This can only occur when women can access different sources of information than men. Our key argument is that mass media and social media are unlikely to generate substantial disagreement in the Indian context because women's access to different private information sources is limited in the media space. On the other hand, local 'non-media' sources such as interactions with family or in the workplace may provide the basis for different private information. Because media is possibly less salient in forming preferences in local constituency-level issues, and local sources are more salient in such a setting, men and women are likely to display more disagreement in local political preferences relative to national political preferences. Thus, direct observation (i.e., greater access to private non-media sources of information) in within-constituency preferences is likely to generate greater partisan disagreement. This does not preclude the possibility that in contexts in which differentiated, individualised media sources are available on matters beyond local issues, there could well be greater disagreement beyond the local level.

On Preferences

There is substantial literature on how individuals form partisan and political preferences, particularly in the United States. We may bifurcate these theories into two broad classes. One class of arguments holds that partisan preferences are relatively stable, either due to family

socialisation (Campbell et. al., 1960) or due to their explicit construction as a social identity like ethnicity or religion (Green et al., 2008). But the sheer volatility in party vote shares across elections in India (Nooruddin & Chhibber, 2008) casts doubt on the strength of partisan identity or socialisation. Although recent work has argued for some ideological stability to India's electoral system (Chhibber & Verma, 2018), frequent party defections among legislators (Kamath, 1985), in addition to the aforementioned electoral volatility, casts doubt upon the extent to which stable ideological preferences frame partisan choices. A second class of arguments—which does not rely on stability of party preferences—focuses on what influences political preferences. Here, the emphasis is on the role of local discussion networks (Lazarsfeld, 1944) or political elites (Zaller, 1992; Lenz, 2013) in framing political opinions and issue preferences. Indeed, there is some empirical evidence that family discussion networks (Sircar, 2015) and elite-driven framing (Sircar, 2020) are relevant for partisan preferences.

In this paper, we remain agnostic on the precise factors that influence partisan preferences. Though partisan preference formation is an extremely crucial component, our focus here is on a particular channel of influence rather than preference formation as a whole. Nonetheless, at a minimum, we should only expect substantial differences in political preferences when the sources of influence, local or elite, are sufficiently differentiated. Put another way, we should expect men and women in the household to express similar partisan preferences if: (1) the sources of influence are substantially similar; or (2) there exist few sources of influences beyond the household (especially for women).

Media and Disagreement

The relationship between media and public attitudes is of intrinsic interest in understanding partisan preferences. This literature studies the ability of the media to set the agenda, the power of the news to prime and place emphasis on issues, and the capacity of the media to frame issues in different ways (Iyengar & Kinder, 1987; Miller & Krosnick, 2000). Combining rich survey data with robust experimentation, the burgeoning literature on media effects demonstrates troubling effects on behaviour and attitudes. Online media, in particular, seems to contribute to an echo chamber effect, where people share information that both conforms to the norms of their

group and tends to reinforce existing beliefs (Jamieson & Capella, 2008). However, the emerging empirical literature on media effects does not draw on data or insights from the Indian context.

The media landscape in India has witnessed massive changes in the last few decades. This has been particularly true in the vernacular public sphere, beginning with the rapid expansion in print media (newspapers) from the 1980s onwards (Jeffrey, 2000; Ninan, 2007) and then television (Kohli-Khandekar, 2013), followed by a veritable explosion of social media in the last few years. The Indian public sphere is increasingly mediated not just by mass media (television, print, and radio)—where supply shapes demand—but by technology in the hands of millions of users, where demand influences supply. This rise in access to media has been propelled by the profusion of information and communication technologies (ICTs). Low data prices, affordable smartphones, and continued upgradation to 4G after its introduction in 2016 led the total data traffic in India to increase by 44 times and the monthly data usage per user to increase almost 14 times in just four years (2015–2019), one of the highest in the world (Kaka et al. 2019; Nokia, 2020). The key driver of higher data consumption has been increased video viewership.

We characterise various media along two axes: (1) the extent to which the information provided by the media source varies across members of the household; and (2) whether engagement with the media source is publicly shared or done in private. Members of the household likely watch the same channel(s) on the television or the newspaper is publicly shared across the household. Hence, insofar as mass media is influential for partisan preferences, print and television media are unlikely to cause differentiation *within* the household. Mass media is a ‘one-way’ source of information, in which the receiver of information does not directly interact or discuss with the provider of the information, and in which there is no scope for variation in the information provided by the source. While other, non-media sources of influence such as advertisements and cultural affiliations could also impact preferences, the receptiveness of such networks is itself correlated with media use, as knowledge and awareness about celebrity endorsements and advertising can itself be gleaned from and through the media.

Social media, like Facebook or WhatsApp, the sources of influence, are online personal networks and thus a ‘two-way’ source of information in which the receiver of information can actively

discuss or argue with the provider of information; this discursive nature of media implies a more active engagement among its users. Insofar as people have different personal networks on social media (as opposed to watching the same news programme) and can engage with their networks in private, social media has the capacity to generate different partisan preferences within the household. Even within social media, different platforms might elicit varied attitudes and behaviours. While networks might be personalised, the weaponisation of social media by political and other causes means that they can very well take on the role of broadcasting platforms. Survey data from before the 2019 election in India finds that one-sixth of respondents said they were members of a WhatsApp group chat started by a political leader or party (Kumar and Kumar 2018).

Further, although social media is a ‘two-way’ source of information, participation in social media can manifest in several ways: some respondents can be active posters, while others only passive receivers of content. Every instance of participation can be meaningful enough to affect political preferences. Moreover, participation itself is a function not just of individual preferences, but also technological factors such as internet speeds, access to applications and websites, and social media algorithms. Despite this, we underscore that the act of being able to log on to social media independent of one’s spouse and to have one’s own accounts and networks, despite the level of participation, can itself lend to the formation of attitudes. Thus, our argument is less about instances of participation that can be quantified (likes, comments, and tweets) and more about the ability to do so independently relative to mass media sources like television, which can impact attitudes and preferences.

Crucially, however, social media is only likely to be influential if a significant proportion of the population is using it, as its impacts are driven not only by being on social media but others in the personal network being on social media as well. This implies that to the extent that there are media effects on intra-household political differences, they are more likely driven by social media, which requires large-scale *individualised* access to a computer or a smartphone.

By early 2020, an average user in India was consuming more than 11 GB of data per month (Nokia 2020), more than the average in more technologically advanced countries such as China

and South Korea. Internet penetration in India has increased exponentially over the past few years (albeit on a very low base) and the biggest gains have come from non-metro and Tier 2 cities. For instance, Bihar alone saw internet connectivity growth of over 35 per cent in 2018, the highest in the country (Mathur 2019). Additionally, India is now the world's largest market for WhatsApp, an encrypted peer-to-peer messaging application. Nonetheless, broadband penetration in India in end-2019 was around 47 per cent, significantly lower than China at 95 per cent (Nokia, 2020).

This rapid and unprecedented transformation in technology and media in India has potentially major social, political, and economic consequences. However, this growth in scale, reach, and influence has not been matched by a corresponding rise in attention to the precise ways in which media is being consumed in India, and its disparities within households. The uneven penetration of broadband and mobile phones is likely to manifest in gender disparities. More precisely, the individualised use and ownership of mobile phones is likely impacted by both income constraints as well as the same sorts of restrictions that prevent women's mobility outside of the home. Because individualised access to social media for women is uncommon in lower-income households, we suspect a muted role of media, whether mass media or social media, on overall levels of political differences between men and women. Consequently, disagreement between men and women in the household is likely driven by 'non-media' sources of information.

Women may indeed establish personal networks of friends and family locally that are distinct from the male members of their household, even more so if they are employed (i.e., have greater access to distinct personal networks outside the home). These distinct personal networks can plausibly generate private information about the local political environment (Lazarsfeld, 1944), suggesting that partisan disagreement is more likely in state politics (where local constituency-level issues are more salient) than in national politics.

We thus hypothesise the following:

Hypothesis 1: There is a gender gap in access to media sources. Furthermore, women have low individualised access to (social) media and are thus dependent upon physical networks for private information.

Hypothesis 2: Women are more likely to display partisan disagreement with the PWE in state politics as compared to national politics, as this is where distinct physical networks for women are likely to be most informative.

Hypothesis 3: Women who have greater access to networks outside the home, namely through employment or other mobility outside the home, are more likely to display partisan disagreement with the PWE.

3. Media Consumption and Gender

In this section, we describe patterns of media usage by gender. Across the board, we find that media penetration is significantly lower among women, with television being the most pervasive media in the population (especially among women) as a news source. Consistent with our first hypothesis, we show that individualised usage of mobile phones (especially smartphones)—which would be needed to regularly access social media like Facebook and WhatsApp in an individualised manner—remains low among women in the population. This is important because it suggests the necessity of access to private information through non-media sources in order to generate political disagreement within the household.

	PATNA		DHANBAD	
	Owns Mobile	Owns Smartphone	Owns Mobile	Owns Smartphone
Adult Females	41	8	35	8
Adult Males	76	21	82	21
Adult Females (10th Pass and Above)	60	27	58	27
Adult Males (10th Pass and Above)	87	45	89	50
Unemployed Working Age Women	43	9	35	8
Employed Working Age Women (Agricultural)	23	1	19	1
Employed Working Age Women (Non-Agricultural)	47	12	50	12

Table 1: Ownership of Mobile Phones and Smartphones by Gender and Key Correlates

(%)

Access to Mobile Phones

In the previous section, we argued that media influence can come through either social or mass media. A prerequisite for individualised social media usage is personal access to a phone, usually a smartphone. In the urban clusters around the cities of Patna and Dhanbad, we investigated media and partisan preferences in detail. We began by collecting data on mobile phone ownership for each member of the household in a household roster in our survey. In our sites of study, there is significant gender gap in mobile phone ownership for adults (those 18 years and older). In Patna, only 41 per cent (8 per cent) of adult women own mobile phones (smartphones) as compared to 76 per cent (21 per cent) of men. In Dhanbad, only 35 per cent (8 per cent) of adult women own mobile phones (smartphones) as compared to 82 per cent (21 per cent) of men (Table 1). Women employed in agricultural sectors display much lower ownership of mobile phones than those employed in non-agricultural sectors or the unemployed. We note here that the

low percentage of women engaged in non-agricultural labour obliges us to combine all such employment categories.

	PATNA		DHANBAD	
	Owns Mobile	Owns Smartphone	Owns Mobile	Owns Smartphone
Head of Household (Male)	72	18	78	18
Wife	38	6	31	5
Son	84	48	83	51
Daughter	35	21	40	23
Son-in-Law	92	46	85	45
Daughter-in-Law	54	16	50	19

Table 2: Ownership of Mobile Phone and Smartphones by Relationship to Head of Household (%)

We further disaggregate mobile phone ownership by relationship to the head of the household in Table 2. We find that while younger generations (sons, daughters, sons-in-law, and daughters-in-law) display higher rates of ownership, the gender gap remains for each type of relationship. That is, male heads of household own mobile phones at a much higher rate than their spouses, sons own mobiles phones much more than daughters, and so on. One plausible argument is that women have lower mobile phone ownership due to lower levels of functional literacy. We also note here that higher levels of education may also allow one to discern disingenuous or ‘fake news’ (Badrinathan, 2021).

In order to understand the role of functional literacy in mobile phone ownership, we look at the gender gap for the more educated population (Table 1). Approximately 3,645 (40 per cent) of 9,193 adults in the Patna sample and 3,691 (37 per cent) of the 9,906 adults in the Dhanbad sample completed education up to at least Class 10. Of these, 35 per cent and 37 per cent were women in Patna and Dhanbad, respectively. Indeed, education (and its correlates) are strongly predictive of mobile phone ownership, with 78 per cent of adults having completed Class 10 owning a mobile phone (as compared to 57 per cent in the general adult population). But even among this population, there is a large gender gap (which also extends to smartphone ownership). In Patna, 60 per cent of adult women who completed Class 10 owned a mobile phone as compared to 87 per cent adult men with the same educational qualification. Similarly,

in Dhanbad, 58 per cent of adult women who completed Class 10 owned a mobile phone as compared to 89 per cent adult men with the same educational qualification. This lends credence to the idea that, while different levels of functional literacy matter for mobile phone ownership, the gender gap in mobile phone ownership is also significantly driven by social control within the household.

Media Sources for News

	PATNA				DHANBAD			
	Not Class 10 Pass		Class 10 Pass		Not Class 10 Pass		Class 10 Pass	
	Female	Male	Female	Male	Female	Male	Female	Male
Television	14	23	49	56	14	35	42	66
Newspaper	0	10	17	49	0	9	8	41
WhatsApp	0	3	7	14	0	3	9	19
Facebook	0	2	4	11	0	2	5	15
No Source Named	85	71	47	26	86	61	56	24

Table 3: Top Four Media Sources of News by Gender and Education in Dhanbad and Patna (%)

Table 3 describes the gender-wise breakdown of the top four reported sources of news across 3,041 and 3,237 households in Patna and Dhanbad, respectively (in addition to those who reported no media news source). Respondents were allowed to give more than one response if they named a media news source. In each household, the (male) PWE and a randomly selected working age (18–59) female were interviewed. There are three major takeaways from Table 3.

First, there is a major gender disparity in the percentage of male PWEs and working age females accessing news information. In both Patna and Dhanbad, nearly three-quarters of female respondents do not mention a source, suggesting significant reliance on family or private information for understanding the world. Consistent with the data on mobile phones, 90 per cent of those employed in agriculture in each city do not name a news source, as compared to 70–75 per cent for unemployed working age women or those engaged in non-agricultural labour. In addition, more than one-third of PWEs in both cities do not report an important media source for

news. This suggests a significant role of non-media sources of influence across the population, particularly for women, even when media and mobile phones are available. Nonetheless, Table 3 shows that education is at least as large a factor in using news sources as gender. Indeed, women who have passed Class 10 are more likely to report a source than men who have not done so.

Second, television (and mass media more generally) are by far the most consumed media sources for news among the population. Even with mass media, however, there is a noticeable gender gap in newspaper readership. While PWEs, especially those who have completed Class 10, report a diverse media diet, working-age women (if they report a news source) are almost exclusively bound to television as a news source. In both cities, only about one in seven women who have not completed Class 10 report a news source, and almost always report television as the source when they do so. This is not just due to differences in functional literacy between men and women. We note that even among men and women who completed Class 10, there is a 30 percentage point gender gap in reporting newspapers as a news source. Most newspapers have local city editions in larger cities in India—such as Dhanbad and Patna—that provide local and state-specific news. Their absence in the media consumption habits of women is further evidence that women rarely consume media sources with local information.

Third, the major social media outlets, Facebook and WhatsApp, are reported by a small fraction of the population as a source of news, as these are used almost exclusively by those who have completed Class 10. Here too, there is a significant gender gap; the percentage of women who have completed Class 10 using either Facebook or WhatsApp as a source of news is 7 to 10 percentage points less than men with the same educational qualifications. This is consistent with the low mobile phone penetration among women in the population. But even among men, for whom social media is more widely available, low usage as a news source suggests that social media is typically used for reasons other than political information.

A Closer Look at WhatsApp

Our data shows that the overall penetration of social media is still quite low, especially as a source for news. Yet, once we look at the population that completed at least Class 10, more than

a quarter of the women and nearly half of the men have a smartphone. With education growing, especially among women, and increasing penetration of smartphones, social media access is poised to grow among the population at large. An analysis of social media usage, thus, provides some insight into how the media space is likely to change in the coming decade.

The spread of social media has sharply expanded the quantity and diversity of information to which citizens have access, and has created unprecedented opportunities for communicating with peers, whether about cooking or current events (Barbera et al. 2015). The sources of media, the content of the information, the medium through which this information is transmitted, and the characteristics of the audience, all influence the persuasiveness of information and, in turn, affect the conditions under which people tend to change their attitudes. Here, we take a closer look at the usage and behaviour of one of the main social media applications, WhatsApp.

Table 4 shows the pattern of usage for WhatsApp among those that have completed Class 10, i.e., those that disproportionately have access to social media. Respondents were allowed to report multiple usages of WhatsApp (hence, the percentages do not add up to 100 in each column). There are three important takeaways from this table. First, about 20–30 per cent of men and women who have completed Class 10 use WhatsApp, suggesting a moderate penetration of the medium among the educated population. Second, unlike the other media we have reported, there is not a strong gender gap in the usage (or non-usage) patterns, with slightly higher usage among men for work-related and political information reasons. Third, and most importantly, while WhatsApp is heavily used for socialising, a relatively small fraction of WhatsApp users report using it to specifically get news and information (whether or not politics-related). Of course, political influence may occur through social interactions with friends and family, but this underscores that very few people explicitly see WhatsApp as a source for news, unlike dedicated sources of news information like television news or the newspaper.

	PATNA		DHANBAD	
	Female	Male	Female	Male
Communicating with Friends and Family	20	19	19	21
Video Calls	15	14	17	18
Voice Calls	8	7	10	11
Work-Related	9	13	10	17
Jokes	8	7	7	9
News and Information (Politics)	3	5	5	10
News and Information (Not Politics)	2	3	2	8
<i>Does Not Use WhatsApp</i>	79	76	80	73

Table 4: Patterns of WhatsApp Use among those who have completed Class 10 (%)

Finally, we look at the frequency of interaction on WhatsApp among the subset of users identified in Table 5, which elucidates two key points. First, users of WhatsApp interact with the medium frequently—between one-third and one-half of its users who have completed Class 10 use it for multiple hours a day. Second, there is little gender gap in usage patterns for WhatsApp. In fact, in Dhanbad, women are more likely to use WhatsApp multiple times a day as compared to men. Taken together with the fact that women who have completed Class 10 use WhatsApp at similar rates as men with the same educational qualification, this suggests that social media might be more equitable in gender access as compared to mass media (especially newspapers).

	PATNA		DHANBAD	
	Female	Male	Female	Male
Several Hours a Day	39	47	37	50
A Few Times a Day	35	35	53	31
Once a Day	14	12	6	14
A Few Times a Week	9	4	2	3
Once a Week	1	1	1	1
Less Than Once a Week	2	1	1	1

Table 5: Usage Patterns of WhatsApp Users Who Have Completed Class 10

4. Intra-Household Political Disagreement Between Men and Women

In this section, we describe the patterns of partisan disagreement between women in the household and the male PWE. As discussed earlier (in Section 2), we view the increased possibility of partisan disagreement as evidence that women in the household have cognitive agency to form political opinions distinct from the PWE or male household head (although homogamous marriage patterns may lead to homophily, the converse may, hence, not be necessarily valid). While there is a high level of agreement among members of the households in our data, we find that there is greater partisan disagreement on the state-level preferences (as compared to the national-level preferences), consistent with our second hypothesis. Using binary logistic regression, we also show that networks outside the home for women through employment or other activities (i.e., potential non-media sources of influence) do have a discernible impact on the likelihood of partisan disagreement in the household, consistent with our third hypothesis. This suggests that despite the pervasiveness of news media and social media, private non-media sources of information may still play the largest role in the independent formation of political preferences for women.

Partisanship

In both Patna and Dhanbad, we asked respondents to tell us ‘which party they support’ at the centre and in their states. Unlike states in which two parties win a disproportionate share of votes, Bihar and Jharkhand display electoral systems in which multiple parties compete and form pre-electoral coalitions. This creates challenges in coding partisan disagreement. If two members of a household name two different parties in the same pre-electoral coalition, should this be coded as disagreement? Even more challenging is when one member professes support for an independent candidate or a minor party or refuses to answer the question, as it is unclear whether members of the household would genuinely disagree in a competitive electoral scenario.

In this article, we opted for a conservative measure of disagreement, which necessarily understates the overall level of disagreement. Both of our study sites are areas in which the Bharatiya Janata Party (BJP) and its ally Janata Dal (United) [JD(U)] are popular. We thus coded a binary variable taking the value 1 if the individual supported BJP or JD(U) and 0 if it supported any major opposition party to the BJP and JD(U) (regardless of whether or not these opposition parties were in alliance). In Bihar, this opposition consisted of the Indian National Congress (INC), the Rashtriya Janata Dal (RJD), and the Bahujan Samaj Party (BSP). In Jharkhand, this opposition consisted of seven “Jharkhand parties” and Left parties.⁴ The rest of the data were coded as missing. Altogether, this coding captured the partisan preferences of 92 per cent of women and 94 per cent of men in Patna, and 92 per cent of women and 95 per cent of men in Dhanbad when a preference was stated. The PWE and the female respondent were said to disagree if they disagreed on this binary measure of party preference, i.e., if one person preferred the BJP alliance and the other person preferred a major opposition party. Thus, if the male and female respondents stated preferences for two different opposition parties they were still coded as being in agreement. Agnostic cases (where one person either refused to respond or mentioned

⁴ These parties are: Communist Party of India (CPI), CPI(ML) Liberation (CPIM), Communist Party of India (Marxist) (CPI-ML), All Jharkhand Students Union (AJSU), Jharkhand Vikas Morcha (P) (JVMP), Jharkhand Mukti Morcha (JMM), and Jharkhand Party (JKP). We note that JVMP would later form alliance with the BJP after this survey was conducted.

a minor or independent party) were coded as missing. We prefer this conservative measure as it does not overstate disagreement due to complexities in survey response.

	PATNA		DHANBAD	
	National	State	National	State
Female BJP Alliance Support (%)	89	63	93	91
Male BJP Alliance Support (%)	85	65	95	90
Partisan Agreement (%)	86	61	92	87

Table 6: Levels of Partisan Support and Agreement in Patna and Dhanbad

Table 6 displays the levels of partisan support for the BJP alliance and the level of partisan agreement. The measures of ‘support’ need to be understood in context and should not be confused for ‘vote choice’. There are a number of strategic reasons why people may vote differently from their top partisan preference. Furthermore, surveys are known to be biased toward the dominant party in the system (the BJP), so people simply answer ‘BJP’ even if they hold different preferences. But this type of survey bias response would only attenuate the level of disagreement estimated in the sample. There are two key takeaways from Table 6.

First, even with very high levels of BJP alliance support, we find strong evidence of ‘homophily’—that two individuals in the household are more likely to share a partisan preference than if they had been paired randomly. If male and female respondents in Patna had been randomly paired, they would be expected to display partisan agreement 77 per cent (54 per cent) of the time in national (state) party preferences. Similarly, if male and female respondents in Dhanbad had been randomly paired, they would be expected to display partisan agreement 89 per cent (83 per cent) of the time in national (state) party preferences. In all cases, the level of partisan agreement in the household exceeds these random pairing numbers. We reiterate that homophily need not be evidence of coercive behaviour and people in the household may develop similar preferences due to shared religious/caste backgrounds, common social experiences, or political discussion; a consequence of the levels of homogamy and assortative mating in India. Indeed 67 per cent of female respondents in Dhanbad and 78 per cent of female respondents in

Patna report that voting choices are a collective decision (the rates are similar for our male PWE respondents).

Second, the degree of partisan disagreement is higher at the state level, consistent with our second hypothesis. In Section 2, we suggested that this is because partisan preferences at the state level are often driven more by local (constituency-level) factors and men and women may plausibly have different private information that impacts their political preferences. An alternative argument is that lower disagreement is seen at the centre because the BJP-led NDA alliance is more dominant at the centre so there is less scope for disagreement. Below, we use regression analysis to provide more evidence for the private information story, i.e., those women who have access to distinct personal networks are more likely to display partisan disagreement in state-level party preferences.

Understanding Disagreement

In order to understand the correlates of partisan disagreement between working age females and the male PWE, we run a logistic regression and the disagreement in state-level partisan preferences in both Patna and Dhanbad. In the regression, we control for the four main modes of media access described above (television, newspaper, Facebook, and WhatsApp) and whether the female respondent has completed Class 10. We also control for inequalities in the relationship by controlling for the relationship between the female respondent and the male PWE, as well as their relative ages.

Furthermore, to understand the role of different personal networks for women, we control for the type of employment for the female respondent (agricultural or non-agricultural). To understand the role of personal networks outside of employment, we also control for whether female mobility outside the home was to ‘meet relatives or friends in the neighbourhood’ and to ‘go to nearby places outside of the neighbourhood’. Due a strong correlation between these two types of mobility, we add an interaction term in the final regression specification. We note that the last question is part of a large module on female mobility and permission analysed in detail by Mehta and Sai (2021).

The results of the regression are shown in Appendix A (due to space constraints). Three key results are worth highlighting.

First, mass media exposure to television (statistically significant in Patna) and newspapers (statistically significant in Dhanbad) is correlated with *greater* agreement within the household. This is consistent with our discussion of mass media having homogenising effects within a household in Section 2.

Second, employment is associated with greater partisan disagreement, but this is only true for agricultural employment. In Patna, holding all other predictors at their mean values, an employed woman is expected to show partisan disagreement with the PWE 38 per cent of time, as compared to 46 per cent of the time if she is engaged in agricultural labour. Similarly, in Dhanbad, holding all other predictors at their mean values, an employed woman is expected to show partisan disagreement with the PWE 11 per cent of time, as compared to 20 per cent of the time if she is engaged in agricultural labour.

Third, the measures of outside networks are broadly associated with greater disagreement. For instance, holding all other predictors at the mean (and accounting for the interaction term in the regression properly), a working-age woman visiting friends/relatives in Patna is expected to disagree with the PWE 40 per cent of the time, as compared to 31 per cent of the time if she does not do so. In Dhanbad the effect sizes are smaller, reflecting the overall higher rates of agreement. A working-age women visiting friends/relatives in Dhanbad is expected to disagree with the PWE 12 per cent of the time, as compared to 10 per cent of the time if she does not do so.

Overall, the data provide qualified evidence for the role of distinct personal networks on partisan disagreement in the household. While all measures of distinct personal networks (visiting friends and relatives, agricultural employment, and non-agricultural employment) are associated with greater disagreement across our sample, only agricultural employment is statistically significant in both cities. The role of outside personal networks seems to be much stronger in Patna than

Dhanbad, however. We speculate that the effect seems to be the strongest for agricultural employment, as such a pattern of employment provides significant exposure to a population outside the home but in its vicinity (where local issues are the most salient for the women). Thus, these conditions are the most likely to generate significant partisan disagreement. We caution the reader from drawing causal claims about the role of personal networks from these descriptive data; indeed, those women who already have political independence may be able to negotiate greater mobility outside the home. Careful investigation of these issues is required for a better understanding of these phenomena. Nonetheless, our results point to the importance of looking beyond media sources of influence to the role of non-media private sources of information through personal networks outside of the home in understanding partisan disagreement.

5. Conclusion

This paper is the first study that provides a detailed look at differences in media consumption and partisan preferences between men and women within the same household. We find marked gender differences in media consumption and notable intra-household differences in political attitudes. We show that these differences are more evident in attitudes on local politics than national politics and are more likely to occur when women have access to private sources of information. One key finding in the article is that certain structural factors such as low levels of wealth and education (which are not purely a function confinement) are found to be quite determinative of the modes of information access in this paper. Within this framing, our claims are two-fold vis-à-vis gender: 1) given low levels of media penetration among women, non-media sources are important for access to private information for women; and 2) unlike the other media sources we report on, conditional on meeting the pre-requisites of education patterns, WhatsApp usage is remarkably similar across men and women. At the same time, low sample sizes of social media usage do not permit us to find statistically significant effects of social media on partisan disagreement. We, thus, highlight the unique pattern of WhatsApp and gender and discuss what it may mean with regard to the relationship between partisan disagreement and social media.

Until now, restrictions on personal mobility have curtailed women's access to private sources of information, be it through markets, friends, or the workplace. However, access to mobile phones—and especially to smartphones—is gradually increasing, along with education levels. Our results suggest that functional literacy (captured in our paper through completion of Class 10) together with access to an internet-enabled device (most likely to be smartphones), will allow women much greater access to private information through social media. This is likely to change the role of media in providing information across gender, with consequences for intra-household differences in political preferences and greater cognitive agency for women. Whether, and to what extent, this greater agency will affect social outcomes like women's labour force participation is an area for future work.

REFERENCES

- Aumann, R. J. (1976). Agreeing to disagree. *The Annals of Statistics*, 1236-1239.
- Badrinathan, S. (2021). *Educative Interventions to Combat Misinformation: Evidence from a Field Experiment in India*. *American Political Science Review*, 1-17.
- Barberá, P., Jost, J. T., Nagler, J., Tucker, J. A., & Bonneau, R. (2015). Tweeting from left to right: Is online political communication more than an echo chamber? *Psychological Science*, 26(10), 1531-1542.
- Chhibber, P. K., & Verma, R. (2018). *Ideology and identity: The changing party systems of India*. Oxford University Press.
- Campbell, A., Converse, P. E., Miller, W. E., & Stokes, D. E. (1960). *The American Voter*. University of Chicago Press.
- Nooruddin, I., & Chhibber, P. (2008). Unstable politics: fiscal space and electoral volatility in the Indian states. *Comparative Political Studies*, 41(8), 1069-1091.
- Druckman, J. N. (2004). Political preference formation: Competition, deliberation, and the (ir) relevance of framing effects. *American Political Science Review*, 98(4), 671-686.
- Green, D., Palmquist, B., & Schickler, E. (2008). *Partisan Hearts and Minds: Political Parties and the Social Identities of Voters*. Yale University Press.
- Healy, A., & Malhotra, N. (2013). Retrospective voting reconsidered. *Annual Review of Political Science*, 16, 285-306.
- India Cellular & Electronics Association. (2020). *Contribution of Smartphones to Digital Governance in India*. Available at <https://icea.org.in/wp-content/uploads/2020/07/Contribution-of-Smartphones-to-Digital-Governance-in-India-09072020.pdf>

Iyengar, S., & Kinder, D. R. (1987). *News that matters: Television and American Opinion*. Chicago: University of Chicago Press.

Jamieson, K. H., & Cappella, J. N. (2008). *Echo chamber: Rush Limbaugh and the Conservative Media Establishment*. Oxford University Press.

Jeffrey, R. (2000). *India's Newspaper Revolution: Capitalism, Politics and the Indian-Language Press, 1977-99*. London: C. Hurst & Co.

Jennings, M. K., & Stoker, L. (2005). Political Similarity and Influence between Husbands and Wives. In A. S Zuckerman (Ed.), *The Social Logic of Politics* (pp. 51-74). Temple University Press.

Jennings, M. K., Stoker, L., & Bowers, J. (2009). Politics across generations: Family transmission reexamined. *The Journal of Politics*, 71(3), 782-799.

Kaka, N., Madgavkar, A., Kshirsagar, A., Gupta R., Manyika, J., Bahl, K. and Gupta, S. (2019). "Digital India: Technology to transform a connected nation." McKinsey Global Institute.

Kamath, P. M. (1985). Politics of Defection in India in the 1980s. *Asian Survey*, 25(10), 1039-1054.

Kohli-Khandekar, V. (2013). *The Indian Media Business* New Delhi: Sage.

Kumar, S., and Kumar, P. (2018). "How widespread is WhatsApp's usage in India?" *Live Mint*, July 18, 2018. <https://www.livemint.com/Technology/O6DLmLibCCV5luEG9XuJWL/How-widespread-is-WhatsApps-usage-in-India.html>.

Mathur, N. (2019). "India's internet base crosses 500 million mark, driven by Rural India" *Live Mint*, March 11, 2019. <https://www.livemint.com/industry/telecom/internet-users-exceed-500-million-rural-india-driving-growth-report-1552300847307.html>.

Ninan, S. (2007). *Headlines from the heartland: Reinventing the Hindi Public Sphere*. New Delhi: Sage.

Nokia. (2020). India Mobile Broadband Index 2020.
https://www.nokia.com/sites/default/files/2020-02/Nokia_MBiT_2020_Report%20%28web%29.pdf

Lassen, D. D. (2005). The effect of information on voter turnout: Evidence from a natural experiment. *American Journal of Political Science*, 49(1), 103-118.

Lenz, G. S. (2013). *Follow the leader? How voters respond to politicians' policies and performance*. University of Chicago Press.

Mehta V. & Sai H. (2021). *Where Do Women Go? A Study of Mobility in North India*. Working Paper.

Miller, J. M., & Krosnick, J. A. (2000). News media impact on the ingredients of presidential evaluations: Politically knowledgeable citizens are guided by a trusted source. *American Journal of Political Science*, 44(2), 301-315.

Perrigo, B. (2021). "India's New Internet Rules Are a Step Toward 'Digital Authoritarianism,' Activists Say. Here's What They Will Mean". *TIME*, March 12, 2021.
<https://time.com/5946092/india-internet-rules-impact/>

Sircar, N. (2015). *A Tale of Two Villages: Kinship Networks and Political Preference Change in Rural India* [CASI Working Paper No. 15-02].

Sircar, N. (2020). The Politics of Vishwas: Political Mobilization in the 2019 National Election. *Contemporary South Asia*, 28(2), 178-194.

Zaller, J. R. (1992). *The Nature and Origins of Mass Opinion*. Cambridge University Press.

Appendix A

	<i>Dependent variable:</i>	
	Partisan Disagreement (Patna) (1)	Partisan Disagreement (Dhanbad) (2)
Television	0.231* (0.132)	-0.021 (0.194)
Newspaper	0.092 (0.231)	1.522** (0.747)
Facebook	0.038 (0.548)	0.002 (0.744)
WhatsApp	-0.302 (0.432)	-0.033 (0.590)
Passed 10th Standard (Female)	-0.054 (0.133)	-0.075 (0.190)
Spouse	-0.165 (0.242)	0.120 (0.433)
Daughter	-0.221 (0.351)	-0.229 (0.500)
Daughter-In-Law	-0.391 (0.288)	0.313 (0.490)
Employment (Agricultural)	-0.350** (0.165)	-0.674*** (0.261)
Employment (Non-Agricultural)	-0.056 (0.157)	-0.140 (0.277)
Age (Female)	-0.002 (0.006)	0.044*** (0.011)
Age (Male)	0.004 (0.005)	-0.017** (0.008)
Visits Relatives/Friends	-0.277 (0.173)	-0.658*** (0.238)
Visits Outside Neighborhood	-0.991*** (0.261)	-0.468 (0.448)
Visits Relatives/Friends × Visits Outside Neighborhood	0.830*** (0.290)	1.153** (0.475)
Constant	0.934*** (0.339)	1.302** (0.575)
Observations	1,628	1,657
Log Likelihood	-1,072.208	-608.917
Akaike Inf. Crit.	2,176.415	1,249.833

Note: Coefficients are from a binary logistic regression

*p<0.1; **p<0.05; ***p<0.01

Table A.1 Information Sources and Within-household Partisan Disagreements