

Beyond Isolated Predictors: A Multi-Directional Socio-Psychological Model of Women's Voting Behavior in Punjab, Pakistan



Um E Salma ^a Adil Zaman ^b Muhammad Mushtaq ^c

Abstract: *Female electoral participation in Punjab, Pakistan, is shaped by interdependent institutional, social, and psychological forces rather than isolated predictors. Punjab has approximately 36.34 million registered female voters, while women aged 18 years and older constitute 55.77 percent of the total female population of approximately 116.61 million, underscoring the substantial scale of the potential female electorate. This study examines a multi-directional model of socio-psychological influences, including Weak Institutions and Structural Enforcement (WISE), Community Power Structure (COPS), Education Disparities and Financial Dependency (EDFD), Peer and Community Influence (PECI), Social Cultural Norms (SOCN), Social Norms and Groups (SONG), Misinformation and Fact Checking (MIFC), Facilities and Mobility Limitations (FAML), Security Threat (SETH), and Voting Behavior (VOBE). The model was estimated using PLS-SEM. However, the cross-sectional survey data consisted of 1,459 women who participated in the 2015 general elections in Kenya, selected through multistage sampling. The structural results identify strong cascading relationships, including COPS→WISE ($\beta = 1.000$), WISE→EDFD ($\beta = 0.986$), EDFD→PECI ($\beta = 0.575$), PECI→SOCN ($\beta = 0.990$), and SOCN→VOBE ($\beta = 0.536$). The pathway COPS→WISE→EDFD→PECI→SOCN→VOBE was significant ($\beta = 0.301$, $p < 0.001$), while PECI→SOCN→VOBE demonstrated a substantial effect ($\beta = 0.530$, $p < 0.001$). The model explained 32.5 percent of the variation in female voting behavior. The findings highlight interconnected institutional, socioeconomic, community, and socio-psychological influences on women's electoral decisions. Policy interventions should integrate institutional accountability, women's education, financial empowerment, community support, and gender-inclusive electoral access.*

Keywords: Female Voting Behavior, Socio-Psychological Model, Political Participation, Women Voters, Punjab, Pakistan, PLS-SEM

Introduction

The inclusion of women in politics is a well-known key marker of democratic consolidation, electoral inclusion, and social development (Inglehart & Norris, 2003; Krook & Schwindt-Bayer, 2019). However, in many developing democracies, women's choices at the ballot box are constrained by structural, cultural, and psychological conditions that restrict autonomous political decision-making (Paxton et al., 2020; Alexander & Welzel, 2019). Gender-based constraints, further compounded by movement restrictions, limited institutional application, and unequal power distribution among community members, create a political setting in which women's political agency can be delegated to either family members or community actors, or a local power broker (Bari, 2017; Shabbir & Khan, 2022; Zia, 2020). Electoral participation of women in Pakistan is significantly influenced by inequalities in access to information, mobility, political socialization, and autonomous decision-making (Jalal, 2018; Mumtaz & Shaheed, 2019; Javid, 2021).

Nationally, Pakistan's female electorate comprises approximately 62.6 million registered women out of an estimated 122.5 million adult females, implying a female voter registration rate of roughly 51.1 percent. In the province of Punjab, 36.34 million women are registered out of an estimated 65.2 million, yielding a

^a PhD Scholar in Political Science, Department of Political Science and International Relations, University of Gujrat, Gujrat, Punjab, Pakistan.

^b Lecturer, Department of Political Science and International Relations, University of Gujrat, Gujrat, Punjab, Pakistan.

^c Associate Professor, Department of Political Science and International Relations, University of Gujrat, Gujrat, Punjab, Pakistan.

higher provincial registration rate of approximately 55.8 percent (Alvi, 2025). In the 2024 general election in Pakistan, female electoral turnout stood at 42.7 percent, compared with 51.8 percent for men, and lower than 46.9 percent in the 2018 election in Pakistan. The pattern remained similar in Punjab, the largest province of Pakistan. There are numerous social, structural, financial, and institutional reasons for this declining turnout. But despite the significance of female political rights, there is scarce literature on the various factors affecting female voting rights. Similarly, and more specifically, the structural inequalities, gender norms, political institutions' role, and access to institutional support have been previously explored, but the processes by which these structural factors influence one another have been less explored.

Voting is viewed as a multi-layered process where norms, information flows, institutional capacity, and social networks interact (Green & Shachar, 2021; Dalton, 2020; Campbell et al., 2021). Studies highlight that socio-cultural norms shape internalized expectations for women's political participation, whereas the presence of Peer and community influence leads to the everyday pressures that affect the choices women make (Verba et al., 2017; Carlson, 2020). Similarly, the studies upheld that education disparities and financial dependency may limit access to credible political information and capacity for independent political evaluation (Stockemer & Sundström, 2019). Electoral engagement may also be obstructed by practical and psychological barriers, including the impact of facility and mobility limitations, misinformation and fact-checking, and concerns related to security threats (Hafner-Burton et al., 2020; Schaffer & Luks, 2018).

Gendered political exclusion at the structural level is particularly significant due to weak enforcement of electoral rights, patronage-based political systems, and patriarchal community leadership, which can foster gendered political exclusion (Cheema et al., 2020; Gazdar, 2021). These conditions can lead to entrenched dependency on local elites and male family members, which can make voting decisions more susceptible to social influence, as seen in South Asian democracies (Bhalotra et al., 2018; Chhibber, 2022). This means that not only can the institutional and socio-psychological factors influence female voting behavior, but they can also reinforce one another in shaping female voting behavior.

Some predictors like social norms, education, or mobility have been explored separately in previous literature without taking into account the relationships between these predictors (Sheikh, 2020; Yilmaz and Shakil, 2021). This gap is significant as structural and psychological factors can have interwoven effects, such as institutional weakness may be associated with restrictive norms, peer networks can heighten misinformation, and social expectations can convert structural disadvantage into behavioral outcomes (Huddy et al., 2020). However, the interaction of institutional, community, socioeconomic, and socio-psychological factors in explaining female voting behavior in Punjab, Pakistan has hardly been studied.

This study endeavors to fill this void by estimating a multi-directional model that includes Weak Institutions and Structural Enforcement (WISE), Community Power Structure (COPS), Education Disparities and Financial Dependency (EDFD), Peer and Community Influence (PECI), Social Cultural Norms (SOCN), Social Norms and Groups (SONG), Misinformation and Fact Checking (MIFC), Facilities and Mobility Limitations (FAML), Security Threats (SETH), and Voting Behavior (VOBE). The analysis is conducted based on a sample of 1,459 women using the statistical tool (PLS-SEM) to assess the direct, indirect, and total effects in a single structural framework. The study provides empirical evidence that elucidates the interworking of various socio-psychological mechanisms in influencing a woman's electoral preferences and provides an evidence-based contribution towards policy responses with a gender focus. The overarching contribution is to consider the pattern of female voting as a result of a complex set of institutional restrictions, socialization processes, community types, and individual decision contexts.

Literature Review

This review is thematic, with the aim of extracting variables and directionality logic from the previous research to create the model variables and directionality proposed in this study. There is no literature to support treating the behavior of women as a product of isolated predictors. Rather, it highlights a sequence

whereby structural conditions and community norms affect women's resources, social interactions, internalized norms, information access and the capacity to reach and engage with electoral institutions.

Theoretical Foundation and Model-Development Logic

The proposed framework is based on an institutional, resource, and social-learning-based understanding of political participation. Institutional approaches focus on the need for rules to be put in place, officials to be responsive, and citizens to be able to use electoral institutions without interference to bring about participation through formal voting rights. The civic voluntarism orientation accounts for participation by citing resources like education, knowledge, confidence, time, and money (Verba et al., 1997). In addition, social cognitive theory suggests that significant others (Bandura, 1986) reinforce and communicate political orientations by observation, discussion, reinforcement, and expectation. In addition, cultural factors illustrate the integration of the gendered nature of political behavior in broader values about authority, family status, and women's participation in public life (Inglehart & Norris, 2003). In combination, studies indicate a multi-layered model, where institutions and community power shape the resource and social contexts in which women make sense of and use electoral choices.

Institutional Weakness and Community Power Structures

Formal suffrage is not necessarily effective electoral agency. In countries with poorly enforced electoral laws, complaints are heard but not acted upon, election officials are seen as dependent and/or electoral competition is privatized by patrons; women may have to fall back on informal authorities for information, transport, permission, and/or protection. This is the implementation gap uncovered by institutional weakness between the formal rights to vote and the actual exercise of those rights. It fits into the larger perspective that political institutions influence the costs, credibility, and availability of participation, particularly for those groups with limited opportunities to move about and influence decisions in public.

Local distribution of power is strongly related to institutional weakness. Community power structures symbolises the power of the biradari, families that own land, village elders, religious leaders, and others who can organize and enforce collective political preferences and social costs on those who fail to comply. The studies on women's political engagement in Pakistan have revealed that family, community power, patriarchy, and local leadership have a significant impact on electoral choice and exercising voting rights (Bari, 2017; Gazdar, 2021; Shabbir & Khan, 2022; Zia, 2020). These studies reveal that there is an intersection of caste, class, patriarchy, and community authority in the informal exclusion of women from voting. The findings support the view that community power structures are not just an individual opinion variable, but an upstream configuration of local authority which may influence the operation of institutions for women.

The study thus differentiates between institutional weakness and community power structures and connects them directionally. Community power lowers the effectiveness of enforcement of electoral rights by inaction or by replacing legal rights with decisions made within the community, of discouraging complaints, or by normalizing restrictions on women. Thus, it is hypothesized that community power structures affect weak institutional mechanisms. Given that no direct effect was found as a result of this study, it can be expected that weak institutional mechanisms will not be able to change voting behavior in one go, as is already the case in Salma and Zaman's study (2026). Its impact is more likely to be enacted via women's access to resources, to polling facilities, to political information, and to security concerns for participation.

Education Disparities, Financial Dependency, and Political Autonomy

Resources are needed for citizens to form their preferences and then to act on them in order to be politically involved. Political knowledge and media literacy, plus confidence in interacting with political institutions and with competing political claims, can be reinforced through education. By becoming financially independent, men might have more bargaining power in the household and less reliance on others for transport, communication, and permission. Low levels of education and economic dependence, however, can also render political options more fragile to family gatekeeping, community pressure, and limited availability of

alternative information. The EDFD construct synthesizes these two related mechanisms of the resources, as they both impact women's ability to make political decisions and act independently.

Resource inequality is not assumed to be a direct material barrier. It also influences social exposure in gendered settings. A woman who is relying on family for income, mobility, or information may be less likely to engage in political conversations outside of the home and may be more likely to accept the meaning of local leaders and/or family. The civic voluntarism model of participation suggests that unequal resources lead to unequal participation (Verba et al., 1997), and education and resources are found to contribute to strengthening participation (Stockemer & Sundström, 2019). This literature provides EDFD as a mediator between institutional conditions and social influence.

The direction suggested in the study is thus that inadequate public institutions can maintain educational and economic inequality and fail to enforce equality, and educational and economic inequality can, in turn, make peers, families, and communities more important sources of political interpretation. EDFD is therefore not being used as a separate demographic mechanism, but rather in the context of a cumulative disadvantage process. It is meant to shed light on the processes by which structural inequality intrudes into the socio-psychological context of the formation of voting preferences.

Peer and Community Influence, Social-Cultural Norms, and Social Groups

Political preferences are shaped by frequent contact with family members, peers, neighbors, group leaders, and community authorities. Social cognitive theory states that people imitate behavior's if they see them in others, get their approval, and develop their expectations about acceptable behaviour (Bandura, 1986). In the case of Punjab, these processes are particularly relevant because women's political discussion, access to public meetings, and exposure to opinions of others could be influenced by household and community networks. Research on women's electoral practices in Pakistan reveals that family influence, peer influence, and community influence are important factors to consider in political participation, and that social pressure and constraints imposed by cultural expectations can impede women's ability to translate political knowledge into electoral action (Ali & Akbar, 2021; Khan et al., 2022; Rashid, 2020).

The study differentiates three conceptually distinct constructs that are related to each other. PEGI reflects real-time interpersonal influence, such as political conversations, encouragement, persuasion, and advice from peers and community members. SOCN encompasses more comprehensive and more internally internalized ideas about women's political participation, their compliance with family norms, religious or cultural norms, and women's perceived political autonomy. SONG addresses the stress of being a part of a social group, conformity, collective identity or approval, and the influence of group leaders. These constructs are separated so that all social influence is not considered one undifferentiated influence.

A forwarding sequence is proposed in the thematic literature instead of a direct PEGI-to-VOBE relationship. Wider cultural expectations may become personally salient either because of repeated peer interaction or because of repeated community interaction, which may further enhance or diminish SOCN. Internalized norms are then more likely to be related to the behavioral decision, as they refer to whether voting is seen as a duty, as a traditional activity of women, or as an option subject to family and community preferences. This mediated interpretation is corroborated by Salma and Zaman's (2026) results, which showed that peer and community influence did not directly influence voters' attitudes regarding the election of women. As a result, the main modeling path is EDFD to PEGI to SOCN to VOBE. SOCN is also associated with SONG, as the expectations of the culture can be internalized through group membership and social acceptance.

Political Information Environment: Misinformation and Fact Checking

Access to information is not just a prerequisite for political participation, but also the credibility, diversity, and verifiability of that information. Those women who receive political information primarily through family

members, local leaders, partisan groups, or a few media channels could be more susceptible to taking in information that is selective and may have less opportunity to validate that information (Garrett & Stroud, 2014; Shah et al., 2019). Vulnerability to misleading or biased political information and the ability or tendency to assess and fact-check electoral claims are thus two linked components (Metzger et al., 2010) that constitute MIFC. This construct is pertinent because uncertainty regarding candidates, institutions, and electoral processes can diminish confidence and cause greater reliance on social authorities that are familiar. The information environment is a socially and institutionally constructed environment. Community power structures can decide what messages circulate and what sources are trusted; and peer and community networks can transmit, repeat, challenge, or validate messages (González et al., 2023). Weak institutions can also further diminish the credibility of official information, making rumors or explanations based on partisanship more credible. MIFC is therefore not only considered to be a technological or personal media use variable, but also within the framework of an endogenous information mechanism that is shaped by COPS and PECI. Its inclusion enables the model to explore whether structural and interpersonal factors impact the quality of information that women see, even if misinformation does not directly predict their voting behavior at the moment.

Electoral Access: Facilities, Mobility, and Security

A woman can have political knowledge and desire to vote but not do so. The electoral access dimension of FAML measures the distance to the polling place, lack of transportation, bad roads, inaccessibility of the facility, need for assistance, household permission, and weather as strong practical constraints. Bari (2005), IFES (2024), and PILDAT (2024) emphasize that women's electoral participation can be constrained by mobility limitations, inadequate infrastructure, household restrictions, and difficulties in accessing polling facilities. These restrictions aren't only logistical. In the gendered context, mobility is related to economic dependency, the authority of the family, and the presence of a companion and/or transport that is safe. Thus, FAML serves as a conversion process from political preference to actual voting behaviour (Institute of Global Change, 2026).

SETH includes risks that are perceived or experienced during political participation, such as violence, harassment, intimidation, unsafe rallies, armed actors, and lack of security at polling stations. Apprehensions may be an obstacle to voting directly because they raise the cost of voting to the voter. They can also exacerbate these issues of mobility by making distance and transport dependence more important when public spaces are thought of as unsafe. In both constructs, institutional weakness plays a role; poorly functioning institutions may be inaccessible, and security may affect their use, and peer and community networks may either support or restrict mobility.

The literature supports the WISE-to-FAML and WISE-to-SETH pathways, as well as a PECI-to-FAML pathway. The presence of SETH and FAML is closer to VOBE because they define the possibility of the enactment of women's electoral preferences safely and feasibly. In this way, WISE also ensures that it does not blur the distinction between structural causes of voting effects and the behavioral constraints that are lodged in the proximity of the vote: WISE establishes or upholds conditions, while FAML and SETH provide access and risk mechanisms by which those conditions could have an impact on voting.

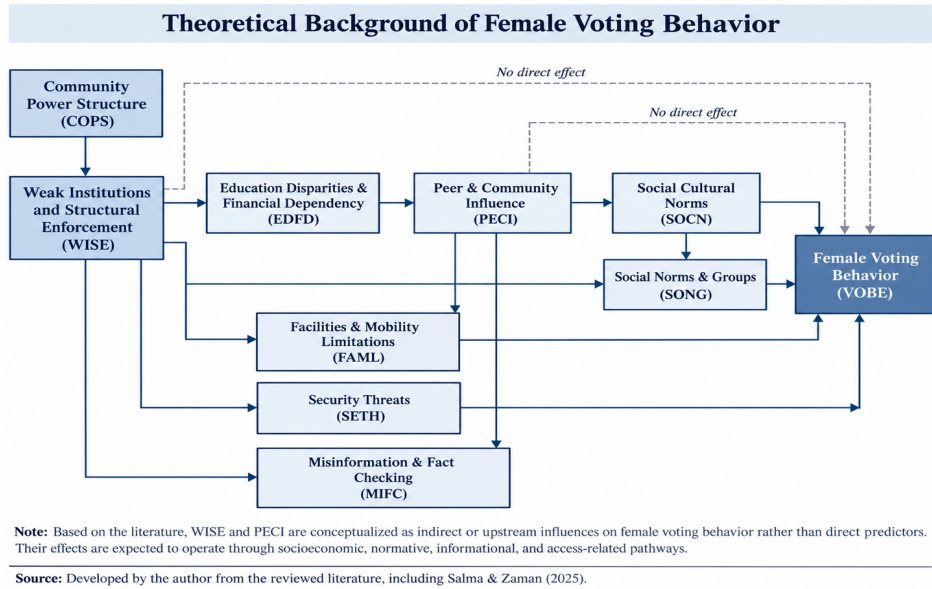
Development of the Multi-Directional Conceptual Model

The thematic synthesis yields a model where the outcome of the voting behavior of women is the result of interconnected institutional, socioeconomic, social, informational, and access mechanisms. The motivation for women's access to resources and exercise of rights is shaped by the local power and institutional landscape, which is why COPS and WISE are placed upstream. In the context of EDFD, the resource mechanism is the one whereby structural disadvantage can make one more reliant on social networks. The interpersonal transmission is represented by PECI, and the internalized cultural expectations and group-level conformity are represented by SOCN and SONG. MIFC is a representation of the information environment,

while FAML and SETH represent the practical and psychological ease of electoral participation. VOB is the final result that is based on participation, perceived duty, and autonomous electoral decision-making.

The central sequential pathway based on the literature is COPS to WISE to EDFD to PECI to SOCN to VOB. Other connections are suggested, namely COPS to MIFC, WISE to SETH, SONG to SOCN, FAML to SETH, and VOB to FAML and to SETH. The most important aspect is that no direct proposals are made to connect WISE or PECI to VOB; given the regression evidence of Salma and Zaman (2026), WISE and PECI are not directly linked to female voting behavior. Their theoretical significance is that they both activate and constrict the resource, normative, informational, mobility, and security mechanisms that are downstream.

Figure 1
Theoretical Model of Female Voting Behavior



This specification is a gap in the literature. Previous research generally measures the effects of caste, family, peers, education, institutions, mobility, or security, but there is not as much evidence for a hierarchy or for the transmission of these factors through the same system. Thus, it is necessary to test direct, indirect, and combined effects simultaneously, using a multi-directional model. This structure is not proposed as a set of variables that are selected based on the analysis; all of the constructs and direction of the relationships come from the thematic literature and from the empirical boundary condition that WISE and PECI should be modeled through indirect pathways.

Materials and Methods
Data Collection Methods

The cross-sectional survey design was employed to explore the behavioral phenomena and socio-psychological constructs under an electoral context (Bryman, 2016; Creswell and Creswell, 2018). The population of interest was adult women voters from various socio-economic, geographic, and cultural backgrounds in Punjab, Pakistan. To ensure representativeness in line with the well-known procedures used for conducting large-scale surveys of voting behavior (Babbie, 2020), a multistage random sampling process was followed. A total of 1,459 respondents were successfully surveyed, which was more than the minimum recommended number of participants for complex structural equation models and had sufficient statistical power for a multi-path analysis (Kline, 2016; Hair et al., 2022). Face-to-face questionnaires were used to gather data, given that this method was appropriate for populations with diverse educational levels and where social norms might impact the accuracy or completeness of self-administered responses (DeVellis, 2017; Dillman et al., 2014).

Measurement Instrument

The survey instrument contains ten substantive constructs, each measured with five questionnaire statements, together with demographic questions on age, education, marital status, occupation, monthly income, district, and urban/rural residence. The substantive items use a five-point Likert response format (1 = Strongly Disagree to 5 = Strongly Agree), consistent with established practice for attitudinal measurement (Joshi et al., 2015). The complete wording supplied in the original questionnaire is reproduced in Table 1. This permits readers to assess content validity and possible overlap among WISE, COPS, EDFD, PECI, SOCN, SONG, MIFC, FAML, SETH, and VOB. The same table also presents the overall reliability of all variables.

Table-1

Item Loadings and Variable Reliability

Synod	Questionnaire statement	Mean	Median	St. Dv	Excess	Ske	Cramer
B	Voting Behavior (VOBE)	Cronbach's Alpha (α):			Acceptable		
		0.708					
Bi	I voted in the last general election.	3.3	4.0	1.3	-1.0	-0.4	9.5
Bii	I usually vote when I'm asked to.	3.1	3.0	1.2	-1.0	-0.2	9.7
Biii	I feel a strong duty to vote in every election.	3.5	4.0	1.2	-0.5	-0.6	11.6
Biv	Voting is an important step towards democracy.	3.4	4.0	1.2	-0.7	-0.6	11.3
Bv	I decide who to vote for independently.	3.7	4.0	1.3	-0.4	-0.8	14.0
C	Social and Cultural Norms (SOCN)	Cronbach's Alpha			Excellent		
		(α):0.95					
Ci	I always follow my social and cultural norms.	3.7	4.0	1.3	-0.3	-0.8	14.2
Cii	I do respect the opinion of religious leaders on politics.	3.3	4.0	1.3	-0.9	-0.4	11.4
Ciii	Voting is an essential traditional value to me.	2.9	3.0	1.4	-1.3	0.1	9.7
Civ	I believe a woman should always follow family advice while voting.	3.4	4.0	1.3	-0.7	-0.6	13.3
Cv	In my community, women are expected to stay out of politics.	3.0	3.0	1.3	-1.2	0.0	7.7
D	Educational Disparities & Financial Dependency (EDFD)	Cronbach's Alpha			Acceptable		
		(α):0.767					
Di	Candidate support is guided by local leaders.	3.4	4.0	1.3	-0.7	-0.6	13.0
Dii	Endorsements from respected elders affect voting in my community.	3.4	4.0	1.3	-0.8	-0.6	12.6
Diii	I feel more confident in political decision-making when I am economically independent.	3.1	3.0	1.3	-1.2	-0.1	8.9
Div	Local influential families shape political participation.	3.5	4.0	1.2	-0.3	-0.7	12.8
Dv	I feel well-informed about Pakistan's political system.	3.1	3.0	1.3	-1.0	-0.2	7.6
E	Social Norms and Groups (SONG)	Cronbach's Alpha			Acceptable		
		(α):0.752					
Ei	I believe that community traditions have a strong influence on my political decisions.	3.7	4.0	1.3	-0.3	-0.8	14.1
Eii	I have noticed that women in my community are challenging traditional voting practices.	3.3	4.0	1.3	-0.9	-0.4	11.5
Eiii	Political gatherings in my neighborhood shape the way people think about elections.	2.8	3.0	1.4	-1.3	0.1	9.7
Eiv	I sometimes change my political views after hearing my group leader debate passionately.	3.4	4.0	1.3	-0.7	-0.6	13.3

Ev	Social approval within my group motivates me to participate in elections.	3.0	3.0	1.3	-1.2	0.0	7.7
F	Peer and Community Influence (PECI)	Cronbach's Alpha (a):0.877			Good		
Fi	I do not usually vote unless someone tells me to.	3.7	4.0	1.3	-0.3	-0.8	14.2
Fii	I actively encourage other women to vote.	3.3	4.0	1.3	-0.9	-0.5	11.5
Fiii	My friends and peers often discuss politics.	2.9	3.0	1.4	-1.3	0.1	9.7
Fiv	I usually vote differently from what my friends suggest.	3.4	4.0	1.3	-0.7	-0.6	13.3
Fv	Political discussions with peers help me decide whom to vote for.	3.0	3.0	1.3	-1.2	0.0	7.7
G	Facilities and Mobility Limitations (FAML)	Cronbach's Alpha (a):0.739			Acceptable		
Gi	I face transportation challenges reaching polling stations.	3.7	4.0	1.3	-0.3	-0.8	14.2
Gii	Lack of nearby polling stations discourages me from voting.	3.3	4.0	1.3	-0.9	-0.4	11.4
Giii	Poor road conditions limit my ability to participate in elections.	2.9	3.0	1.4	-1.3	0.1	9.7
Giv	I cannot access voting facilities without assistance.	3.4	4.0	1.3	-0.7	-0.6	13.4
Gv	Weather conditions sometimes stop me from casting my vote.	3.0	3.0	1.3	-1.2	0.0	7.7
	Misinformation and Fact Checking (MIFC)	Cronbach's Alpha (a):0.71			Acceptable		
Hi	I trust political information shared through the media.	3.5	4.0	1.2	-0.5	-0.8	19.1
Hii	Social media content often confuses me during elections.	2.9	3.0	1.3	-1.2	0.1	11.1
Hiii	I believe political news in the media is often biased.	3.6	4.0	1.2	-0.3	-0.8	14.5
Hiv	I follow regular political updates through TV or social media.	3.0	3.0	1.4	-1.3	0.1	10.8
Hv	I rarely pay attention to political ads or coverage.	3.7	4.0	1.2	-0.2	-0.8	14.9
	Community Power Structure (COPS)	Cronbach's Alpha (a):0.877			Good		
Ii	Local leaders influence which candidates people support.	3.4	4.0	1.3	-0.7	-0.6	13.0
Iii	Endorsements from respected elders affect voting in my community.	3.4	4.0	1.3	-0.8	-0.6	12.6
Iiii	Community gatherings often promote certain political views.	3.1	3.0	1.3	-1.2	-0.1	8.9
Iiv	Local influential families shape political participation.	3.5	4.0	1.2	-0.3	-0.7	12.8
Iv	Village councils guide people's voting decisions.	3.2	3.0	1.3	-1.0	-0.2	7.6
	Security Threats (SETH)	:Cronbach's Alpha (a)0.87			Good		
Ji	I fear violence at polling stations in my area.	3.3	4.0	1.3	-0.9	-0.4	11.5
Jii	Political rallies often feel unsafe to attend.	2.9	3.0	1.4	-1.3	0.1	9.8
Jiii	Armed groups discourage voting in certain neighborhoods.	3.4	4.0	1.3	-0.8	-0.6	13.2
Jiv	I worry about harassment while going to vote.	3.0	3.0	1.3	-1.2	0.0	7.7
Jv	The presence of security influences whether I participate in elections.	3.7	4.0	1.3	-0.3	-0.8	14.2

	Weak Institutions and Structural Enforcement (WISE)	Cronbach's Alpha (a):0.732			Acceptable		
Ki	I doubt that election results are free from manipulation.	3.4	4.0	1.3	-0.7	-0.6	13.0
Kii	Corruption reduces my trust in the voting process.	3.4	4.0	1.3	-0.8	-0.6	12.6
Kiii	Laws protecting voters are not properly enforced.	3.1	3.0	1.3	-1.2	-0.1	8.9
Kiv	Complaints about election irregularities are often ignored.	3.5	4.0	1.2	-0.3	-0.7	12.8
Kv	I believe election officials are not fully independent.	3.2	3.0	1.3	-1.0	-0.2	7.6

* Excess=Excess kurtosis; **Ske=Skewness; ***Cramer=Cramér-von Mises test statistic

Data

Analysis

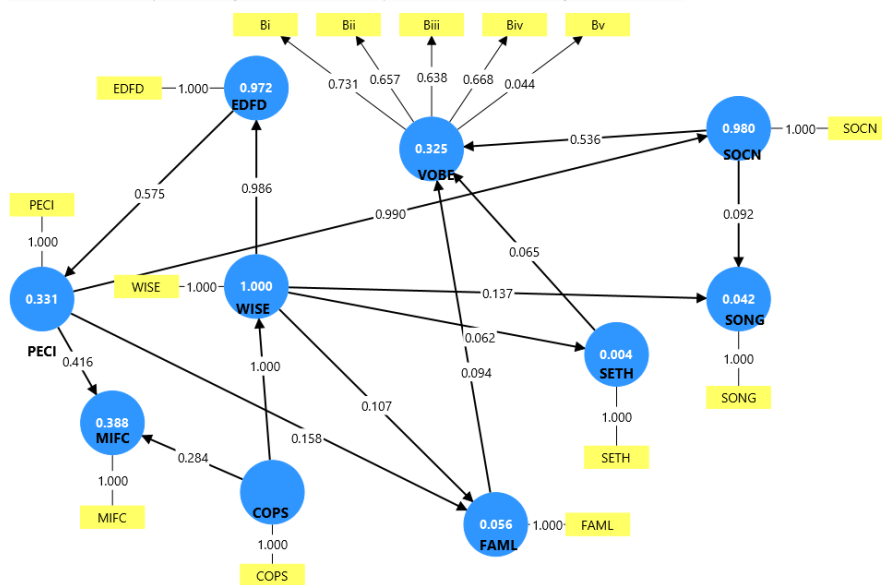
Partial Least Squares Structural Equation Modeling (PLS-SEM) was employed because it allows for prediction-oriented models, complex relationships, non-normal data, and models with formative and single-item indicators (Hair et al., 2021; Sarstedt et al., 2017). Measurement and structural relationships, multicollinearity diagnostics, and direct, indirect, and total effects were estimated using SmartPLS 4. The model's adequacy was evaluated by SRMR, d_ULS, d_G, chi-square, and NFI following the PLS-SEM evaluation practices (Henseler et al., 2016). Standard errors, t-statistics, and significance levels for the structural and mediation paths were obtained using bootstrapping with 5,000 resamples of the full sample of 1459 respondents (Streukens & Leroi-Werelds, 2016). Multicollinearity diagnostics, indicator weights, and relevance testing (Diamantopoulos & Siguaw, 2006) were used to examine formative and single-item constructs. Drawing on the multidimensional perspectives on political behavior (Huddy, Sears, and Levy, 2020), the analytical framework was structured to uncover the interdependent institutional, social, and psychological processes by which women's voting choices come together.

Results

The structural model revealed a very interconnected relationship between institutional, socioeconomic, community, and socio-psychological constructs. Data were presented in three stages: structural paths, indirect effect on voting behavior, and explained variance with model diagnostics.

Figure 2

The Socio-Psychological Model of Women Voting Behavior



Direct Structural Relationships

The pathways with the strongest structural ties were the institutional-to-socioeconomic pathway and the community-to-normative pathway. The relationship between COPS and WISE was extremely high ($\beta = 1.000$, $p < 0.001$), and WISE strongly predicted EDFD ($\beta = 0.986$, $p < 0.001$). EDFD, in turn, predicted PECI ($\beta = 0.575$, $p < 0.001$), and PECI strongly predicted SOCN ($\beta = 0.990$, $p < 0.001$). SOCN was the strongest direct predictor of VOB ($\beta = 0.536$, $p < 0.001$). Smaller but significant direct relationships with VOB were observed for FAML ($\beta = 0.094$, $p < 0.001$) and SETH ($\beta = 0.065$, $p = 0.010$). The findings suggest that the greatest effect on the voting behavior of women goes through a chain from structural conditions to community influence to social-cultural norms internalized by women.

Table 2

Direct Structural Path Coefficients

Structural path	β (O)	Mean	SD	t	p
COPS -> MIFC	0.28	0.29	0.03	9.33	0.00
COPS -> WISE	1.00	1.00	0.00	36887.78	0.00
EDFD -> PECI	0.58	0.57	0.02	25.83	0.00
FAML -> VOB	0.09	0.10	0.02	4.13	0.00
PECI -> FAML	0.16	0.16	0.03	4.86	0.00
PECI -> MIFC	0.42	0.42	0.03	14.36	0.00
PECI -> SOCN	0.99	0.99	0.01	137.70	0.00
SETH -> VOB	0.07	0.07	0.03	2.58	0.01
SOCN -> SONG	0.09	0.09	0.03	2.98	0.00
SOCN -> VOB	0.54	0.54	0.02	24.78	0.00
WISE -> EDFD	0.99	0.99	0.01	117.57	0.00
WISE -> FAML	0.11	0.11	0.03	3.24	0.00
WISE -> SETH	0.06	0.06	0.03	2.30	0.02
WISE -> SONG	0.14	0.14	0.03	4.18	0.00

Note. O = original sample estimate; SD = standard deviation. Values are reported as generated in the original SmartPLS output.

Indirect Effects and Mediation

The indirect-effect analysis does support the mediation role of social-cultural norms and peer/community influence. The indirect effect of COPS on VOB was through the pathway WISE→EDFD→PECI→SOCN ($\beta = 0.301$, $p < 0.001$). EDFD also had strong effects on VOB in the indirect pathway through PECI and SOCN ($\beta = 0.305$, $p < 0.001$); and PECI directly affected VOB strongly through SOCN ($\beta = 0.530$, $p < 0.001$). The smaller but significant pathway of PECI→FAML→VOB was also identified ($\beta = 0.015$, $p = 0.002$). The security threat pathway (WISE→SETH→VOB) and the pathway of security threat (COPS→WISE→SETH→VOB) were not statistically significant (respectively, $\beta = 0.004$, $p = 0.157$), suggesting that the security threat pathway lacked the same mediating strength as social-cultural norms and mobility-related mechanisms. In addition, the overall indirect effects estimated in the model suggest that COPS also indirectly influences VOB through its effects on other factors in the model ($\beta = 0.323$) and that EDFD also indirectly influences VOB through other factors in the model ($\beta = 0.314$), further highlighting the importance of the cascading socio-psychological structure.

Table 3*Key Specific Indirect Effects Leading to Voting Behavior (VOBE)*

Structural path	β (O)	Mean	SD	t	p
COPS -> WISE -> EDFD -> PECI -> SOCN -> VOB	0.30	0.30	0.02	14.80	0.00
WISE -> SETH -> VOB	0.00	0.00	0.00	1.42	0.16
COPS -> WISE -> EDFD -> PECI -> FAML -> VOB	0.01	0.01	0.00	3.02	0.00
COPS -> WISE -> FAML -> VOB	0.01	0.01	0.01	2.14	0.03
COPS -> WISE -> SETH -> VOB	0.00	0.00	0.00	1.42	0.16
EDFD -> PECI -> FAML -> VOB	0.01	0.01	0.00	3.02	0.00
PECI -> SOCN -> VOB	0.53	0.53	0.02	24.61	0.00
WISE -> EDFD -> PECI -> FAML -> VOB	0.01	0.01	0.00	3.02	0.00
EDFD -> PECI -> SOCN -> VOB	0.31	0.31	0.02	14.80	0.00
PECI -> FAML -> VOB	0.02	0.02	0.01	3.07	0.00
WISE -> FAML -> VOB	0.01	0.01	0.01	2.14	0.03
WISE -> EDFD -> PECI -> SOCN -> VOB	0.30	0.30	0.02	14.80	0.00

Note. The table presents the mediation chains directly terminating in VOB; non-VOB auxiliary indirect paths are omitted to avoid redundant analytical output.

Explained Variance and Model Diagnostics

The model explained substantial variance in several endogenous constructs. SOCN had $R^2 = 0.980$, EDFD had $R^2 = 0.972$, and PECI had $R^2 = 0.331$. For the principal outcome, VOB had $R^2 = 0.325$ (adjusted $R^2 = 0.324$), indicating that the modeled socio-psychological and structural factors jointly explained 32.5 percent of the variance in female voting behavior. MIFC showed $R^2 = 0.388$, whereas FAML ($R^2 = 0.056$), SETH ($R^2 = 0.004$), and SONG ($R^2 = 0.042$) had lower explained variance.

Table 4*Explained Variance of Endogenous Constructs*

Construct	R^2	Adjusted R^2
EDFD	0.972	0.972
FAML	0.056	0.054
MIFC	0.388	0.387
PECI	0.331	0.330
SETH	0.004	0.003
SOCN	0.980	0.980
SONG	0.042	0.040
VOB	0.325	0.324
WISE	1.000	1.000

The model-fit indices were SRMR = 0.055 for the saturated model and 0.083 for the estimated model, $d_{ULS} = 0.322$ and 0.715, $d_G = 0.069$ and 0.117, chi-square = 550.352 and 873.950, and NFI = 0.980 and 0.969, respectively. These values represent reasonably good global estimates of the relationships observed. At the measurement level, VOB had Cronbach's $\alpha = 0.516$, $\rho_A = 0.607$, composite reliability (ρ_C) = 0.702, and AVE = 0.364. The HTMT values for VOB ranged from 0.232 (SETH) to 0.724 (EDFD), and both the original diagnostic matrix and the one for EDFD and ECLE showed very high overlaps between PECI and SOCN (0.990) and between COPS and WISE (1.000), respectively. The Fornell-Larcker output indicated a square root of AVE of 0.604 for VOB, that is, higher than its reported correlations with the other constructs. As a whole, the diagnostics help to interpret the structural findings, but also show overlapping measurements that can be used to assess the model.

Discussion

The results reveal that the socio-psychological context in which community pressure, educational dependence of women, financial dependence of women, cultural expectations of women, mobility of women, and institutional weakness are interconnected in producing the voting behavior of women in Punjab. Peer and Community Influence (PECI) was identified as an important transmission mechanism, as it was a good predictor of social cultural norms (SOCN) and had an effect on facilities and mobility limitations (FAML). This is consistent with the evidence that peer/community influences women's political participation and voting behavior in Pakistan (Ali & Akbar, 2021; Khan et al., 2022; Rashid, 2020). The finding is also in line with the social cognitive theory, which states that behavior is learnt and shaped through observation and social interaction (Bandura, 1986). Community networks can thus have an impact beyond providing information about the political arena on the acceptability of political participation and independent voting in the electoral setting.

The effects of Education Disparities and Financial Dependency (EDFD) on voting behavior were mostly mediated by PECI and SOCN, suggesting that the effect of socioeconomic disadvantage is not directly manifested in the electoral arena, but rather via social and normative pathways. This reflects the idea that empowering people through education enhances their political agency through knowledge, confidence, and ability to engage in electoral politics (Shaikh & Javed, 2019). The relevance of the practical constraints on access and mobility to political choice is further reflected in the substantial nature of the contribution of FAML. This pathway was originally described as family influence and is called Facilities and Mobility Limitations in the stated construct system (FAML). The substantive interpretation, however, still supports the results of other research in Pakistan and South Asia that domestic and social factors can influence women's political choices (Hassan, 2018; Jamil et al., 2021).

The clear indirect effects of COPS and WISE highlight how local power dynamics and institutional weakness can affect downstream socioeconomic and socio-psychological factors, and in turn, voting behavior. This is consistent with research which found that women were exposed to systemic barriers such as access to electoral infrastructure and robust implementation of electoral protections (Qureshi & Ahmad 2020; Zaidi 2021). Institutional weakness is thus not only a background condition but can also influence the social environments in which political attitudes, information, mobility and voting choice are being formed.

The mediating roles of SOCN, PECI and FAML are especially significant. VOB was most strongly predicted by the direct effect of SOCN, and the indirect effect of PECI was strong via SOCN. The findings indicate that women's political attitudes are shaped in social and cultural contexts that shape the linkage from structural and community conditions to electoral behavior. These results support the theoretical frameworks that consider social, psychological, and structural factors as determinants of political participation (Verba et al., 1997; Norris, 2002) by explaining a high percentage of variance in the SOCN ($R^2 = 0.980$) and meaningful variance in PECI ($R^2 = 0.331$).

The results suggest that policy interventions that aim to raise women's voter turnout should not target a single barrier. While access to education and financial empowerment are crucial, their impact can be constrained by persistent, limiting community norms, limited mobility, and inadequate institutional enforcement. Interventions must thus be implemented in a way that fosters women's political empowerment through political education, creates conducive and safe electoral processes, provides local support for voters, tightens implementation of electoral rights, and includes measures to curb reliance on local informal power structures. Community participation and/or social norm interventions may be particularly useful to leverage formal political rights to effective political agency because of the central role played by PECI and SOCN as transmission pathways.

Conclusion

This study shows that overall, a web of institutional, socioeconomic, community, and socio-psychological factors influence the voting behaviour of women in Punjab, Pakistan. Weak institutional enforcement and community power structure operate at the upstream level; education and dependency on finances, peer and community influence, socio-cultural norms, mobility constraints, misinformation, and security conditions affect the routes to women's electoral agency. The most powerful pathway was the socialization pathway, where $PECI \rightarrow SOCN \rightarrow VOB$, and the sequential pathway $COPS \rightarrow WISE \rightarrow EDFD \rightarrow PECI \rightarrow SOCN \rightarrow VOB$ demonstrated the structural disadvantage pathway to voting behavior. The findings therefore imply focused interventions that include education and financial empowerment alongside improved institutional accountability, increased access to electoral facilities, community-level support, and interventions to challenge restrictive social norms. The study simultaneously presents the mechanisms, which in turn can provide a more comprehensive understanding of female voting behavior and guide policymakers, civil society organizations, and electoral authorities seeking to strengthen women's effective political participation in Pakistan.

Several limitations should be acknowledged with regard to the findings. First, the cross-sectional design can identify the structural connections but cannot determine the temporal causality. Secondly, the study excludes a study of political, cultural, and institutional variation in other provinces of Pakistan. Third, self-reported survey responses could be subject to social desirability or recall bias. Fourth, the extremely high associations of COPS and WISE and PECI and SOCN, in combination with the comparatively low reliability and AVE values for VOB, suggest possible scale overlap that needs to be studied in future scale refinement. Cross-province, longitudinal, and mixed methods studies would be helpful to determine if the pathways identified are consistent over time and localities.

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