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RESEARCH ARTICLE

Exploring the Dynamics of Critical Thinking, Metacognitive Awareness and Digital Literacy in Mitigating Political Misinformation: The Moderating Role of Gender

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ABSTRACT

Susceptibility to political misinformation is a concept associated with critical thinking and metacognitive awareness. Insufficient relationship is avaialable in literature for this association and core principles. We aimed to find out mediating role of metacognitive awareness and moderating roles of gender and digital literacy between critical thinking and susceptibility to political misinformation.

Sample of the study includes 300 students from various universities. Data was collected through Critical thinking scale (CTS), Susceptibility to Political Misinformation Scale (SPMS), Metacognitive awareness scale (MAS) and Digital literacy scale (DLS).

A significant negative relationship occurs between critical thinking and susceptibility to political misinformation. Metacognitive awareness plays the role of mediator between critical thinking and susceptibility to political misinformation. Digital literacy do not moderates this relationship while gender moderates this relationship.

As the critical thinking increases, the susceptibility to political misinformation decreases and the metacognitive awareness increases. Having digital literacy has no impact on behaviours related to susceptibility to political misinformation. Gender significantly moderates relationship between critical thinking and susceptibility to political misinformation.

INTRODUCTION

In a time when information is shared quickly, the capacity to assess content critically has become more and more important. Democratic processes and public confidence in institutions are seriously threatened by political disinformation (Lewandowsky et al., 2017). This paper examines the relationship between critical thinking abilities and vulnerability to political disinformation, emphasizing the moderating influence of gender and digital literacy as well as the mediating function of metacognitive awareness.

According to Faciano (2015), critical thinking is the cognitive process of assessing and analyzing data in order to make well-reasoned decisions. People who possess good critical thinking abilities are less likely to be misinformed because they are better able to separate fact from fiction (Pennycook &

Rand, 2018). Critical thinking by itself, however, might not be enough; metacognitive awareness a person's comprehension of their own mental processes can have a big impact on how they interact with information (Flavell, 1979).

Furthermore, a key moderator in this dynamic is digital literacy, which is the capacity to efficiently browse and evaluate online information (Hague & Payton, 2010). Given that they may influence how people engage with political content online, gender disparities in critical thinking and digital literacy also merit consideration (Buchanan et al., 2020). Knowledge of these connections can help guide instructional tactics meant to improve critical thinking and lessen the effects of false information.

Critical thinking

The ability to methodically assess and evaluate information is known as critical thinking. It requires critical thinking, problem-solving, and decision-making abilities that enable people to evaluate the veracity of assertions, especially in contentious political situations. According to research, those who possess excellent critical thinking abilities are less likely to be misled because they are able to distinguish between reliable and inaccurate sources (Lazer et al., 2018).

A number of cognitive functions, such as analysis, assessment, and inference, are included in critical thinking. While evaluation determines the reliability and applicability of information sources, analysis entails dissecting complex material into digestible chunks. The capacity to make logical deductions from the facts at hand is known as inference. Educational interventions can considerably lower susceptibility to misinformation by cultivating these abilities (Pennycook & Rand, 2021).

Furthermore, critical thinking is a skill that can be taught by focused educational activities rather than just being an intrinsic capacity. Programs that promote debate or the analysis of opposing views, for example, can improve students' critical thinking skills (Barzilai & Chinn, 2020). These teaching techniques foster a better comprehension of navigating intricate information environments, which eventually results in better decision-making. As people's interpretations of information are influenced by emotional and psychological elements, critical thinking becomes even more important in political circumstances. By pushing people to examine their preconceptions and biases, critical thinking exercises might help counteract the negative impacts of political polarization, which can increase vulnerability to false information (Kuklinski et al., 2000).

Metacognitive Awareness

Understanding one's own cognitive processes is known as metacognitive awareness. It entails self-control and introspection on one's methods of learning, both of which might improve critical thinking abilities (Hidayat et al., 2024). People can more effectively assess the material they come across if they are conscious of their thought and learning processes.

According to research, metacognitive techniques help students learn more effectively by encouraging self-awareness and self-control (Dewi et al., 2018). For instance, students gain a better understanding of their own cognitive processes when they participate in reflective activities like journaling or peer conversations. They can spot biases in their thinking and sharpen their analytical abilities because to this increased awareness. Furthermore, by encouraging a critical assessment of sources, metacognitive awareness might act as a safeguard against false information. People who routinely examine their own thought processes are more inclined to challenge the veracity of the information they are given, which helps them make more educated choices about political material (Hidayat et al., 2024).

Students' capacity to deal with false information can be greatly impacted by educational interventions that emphasize the development of metacognitive skills. Metacognitive awareness can be improved by methods like teaching students how to track their understanding or motivating them to pose insightful queries regarding the content (van Aswegen et al., 2019). Students are better able

to evaluate political material critically as they gain proficiency in self-regulation. In conclusion, developing critical thinking abilities and decreasing vulnerability to false information depend heavily on metacognitive awareness. By fostering an understanding of one's cognitive processes, individuals can develop strategies for evaluating information more effectively.

Digital Literacy

Information retrieval, source evaluation, and efficient digital communication are just a few of the skills that make up digital literacy. According to Dewi et al. (2018), those who possess good digital literacy abilities are better able to identify potential biases in media representations and evaluate the reliability of online content. In political settings where disinformation has the power to sway public opinion and affect election results, this skill is especially crucial.

Digital literacy encompasses a number of skills, such as retrieving information, assessing sources, and communicating effectively online. Strong digital literacy abilities enable people to identify potential biases in media representations and evaluate the reliability of online content more effectively (Dewi et al., 2018). This capacity is especially crucial in political settings because disinformation has the power to sway public opinion and affect election results.

Critical thinking skills and computer literacy are significantly correlated, according to research. For example, research indicates that people with greater levels of digital literacy are more likely to critically assess material found online (Barzilai & Chinn, 2020). According to this relationship, developing one's digital literacy can help one's critical thinking abilities in general. Additionally, incorporating instruction in digital literacy into curricula helps provide students with the skills they need to successfully navigate challenging information environments. Susceptibility to false information can be considerably decreased by educational programs that emphasize the development of digital literacy abilities, such as assessing online sources or comprehending algorithms (Pennycook & Rand, 2021).

Because of the overwhelming amount of information that can overwhelm people and impair their judgment in today's digital world, the need to combat disinformation has become more urgent. Because it enables people to successfully examine, evaluate, and synthesize information, critical thinking is crucial for navigating this environment (Feixas, 2023). The proliferation of "fake news" jeopardizes democratic processes, public trust, and informed decision-making (Allcott & Gentzkow, 2017). Developing critical thinking abilities becomes an essential defense against manipulation as disinformation has a greater impact on social outcomes, ranging from elections to public health (Lewandowsky et al., 2012).

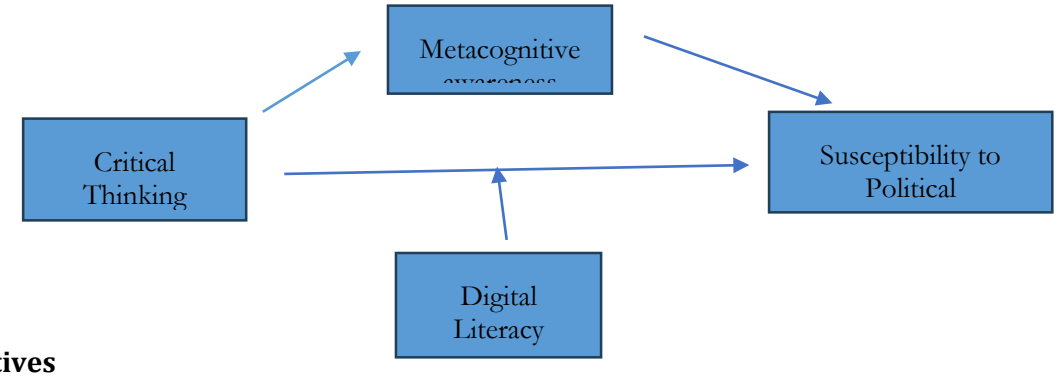
Critical thinking and susceptibility to misinformation have been linked in previous research, but little is known about how metacognitive awareness regulates this relationship and how variables like gender and digital literacy moderate it. For example, while critical thinking-boosting therapies have demonstrated potential in lowering susceptibility to misinformation (DIP study, 2024), little is known about how well these interventions work across a range of demographic groups. By investigating how metacognitive techniques might be modified to suit various demographics, this study aims to close this gap and increase their efficacy.

Few researches have thoroughly examined metacognitive awareness's function as a mediator between critical thinking and susceptibility to misinformation, despite the fact that it is acknowledged as a crucial component of critical thinking (Schraw & Dennison, 1994). Not enough attention has been paid to how gender and digital literacy affect the connection between disinformation and critical thinking. Developing focused educational interventions requires an understanding of these moderating elements (Mihailidis & Viotty, 2017). There aren't many useful frameworks that combine media literacy programs with critical thinking instruction.

The objective of this study is to suggest practical methods that teachers can use to help children develop critical thinking abilities (UNESCO report, 2020). This study is noteworthy for its possible contributions to educational approaches meant to counteract misinformation, in addition to its current relevance. By filling in the identified research gaps, our effort will offer insights that can guide curriculum development and policy decisions, ultimately promoting a better educated society that can interact critically with information.

CONCEPTUAL FRAMEWORK

Method



Objectives

1-To investigate relationship between critical thinking and susceptibility to misinformation among university students.

2-To investigate impact of critical thinking on susceptibility to political misinformation among university students.

3-To find out the intermediate contribution of metacognitive awareness within the context of critical thinking and susceptibility to political misinformation within the university student population.

4-To elucidate the moderating influence of digital literacy and gender identity between analytical thinking and vulnerability to political misinformation.

Hypotheses

1-There is negative correlation between analytical thinking and vulnerability to political misinformation among university pupils.

2-Critical thinking has significant impact on susceptibility to political misinformation.

3-Metacognitive awareness mediates the association between critical thinking and susceptibility to political misinformation among university pupils.

4-Digital Literacy moderates the association between critical thinking and susceptibility to political misinformation among university pupils.

5-Gender moderates the association between critical thinking and susceptibility to political misinformation among university pupils.

Instruments:

Informed Consent

The informed consent comprises of details about the study and seeks willingness of the participants. Furthermore, it ensures participants about confidentiality of data and data usage for solely research purposes.

Digital Literacy Scale

The Digital Literacy Scale (DLS) developed by Chen et al. (2021) intents to assess digital literacy expertise among university pupils. It is founded on a theoretical foundation that incorporates nine aspects: citizenship, creativity, communication, teamwork, analytical thinking, curation, copyright, and connection. The 36 items on the measure are assessed on a 5-point Likert scale, which enables respondents to express how confident or in agreement they are with their digital skills. With a Cronbach's alpha of 0.894, which indicates strong internal consistency, the DLS's reliability was validated using exploratory factor analysis (EFA) with a sample of 349 people and confirmatory factor analysis (CFA) with a second sample of 442 participants. With a Kaiser-Meyer-Olkin (KMO) measure of 0.886 and a total variance explained of 62.87%, the scale exhibits good construct validity, ensuring it as a reliable and valid tool for measuring digital literacy in scholastic world (Chen et al., 2021).

Metacognitive Awareness Scale

The Metacognitive Awareness Inventory (MAI),was formulated by Schraw and Dennison in 1994. It is a widely accepted measure designed to capture metacognitive awareness through a comprehensive set of 52 items. The two main parts of the inventory are Knowledge of Cognition and Regulation of Cognition. While Regulation of Cognition refers to the methods used to manage and keep an eye on cognitive processes throughout learning activities, Knowledge of Cognition comprises declarative, procedural, and conditional knowledge about one's learning processes. On a 5-point Likert-type scale, respondents score each item to indicate how representative each assertion is of their educational experiences.

The MAI has proven to be very valid and reliable in a number of research. Cronbach's alpha coefficients are generally reported above 0.80, suggesting good reliability, and the scale has a high level of internal consistency (Schraw & Dennison, 1994). The factorial structure of the MAI and the uniqueness of its components have also been confirmed by exploratory and confirmatory factor analyses. It has been successfully applied to improve comprehension of students' metacognitive processes and how they relate to academic achievement in a variety of educational environments (González-Cabañes et al., 2022).

Critical Thinking Scale

The Critical Thinking Scale (CTS) developed by Facione in 1992 is a widely accepted tool designed to measure critical thinking skills. The 25 items on this scale assess many aspects of critical thinking, such as reasoning, analysis, evaluation, and inference. A 5-point Likert-type scale is used to score each question, enabling respondents to indicate how confident or in agreement they are with their critical thinking skills.

Numerous research has shown the scale's high validity and reliability. Cronbach's alpha scores for the CTS's internal consistency are generally above 0.80, indicating strong reliability, according to reports (Facione, 1992). The scale has also undergone a number of rigorous validation procedures, such as exploratory and confirmatory factor analyses, which have verified the factorial structure of the scale and the uniqueness of its constituent parts. According to Kember et al. (2000), the CTS is a useful tool for educational evaluations and has been applied in a variety of settings to improve comprehension of students' critical thinking processes and how they relate to academic achievement.

Susceptibility to Political Misinformation

The Susceptibility to Misinformation Scale (SMDS) which is formed Maertens and his colleagues in 2022, consists of 12 items designed to assess individuals' susceptibility to misinformation in the context of social media. In the context of political disinformation, this scale is modified. Using a

evaluation scale structure with rating as 1 to 5, this measure assist subjects to indicate how much they agree with different assertions about their encounters with false information.

Cronbach's alpha was used to evaluate the scale's dependability; the result was 0.87, which indicates strong internal consistency. Furthermore, the SMDS's construct validity and the suitability of its factor structure for assessing sensitivity to disinformation were confirmed using exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) (Maertens et al., 2022).

Sample

The cohort was composed of 300 students enrolled in various departments of universities of Islamabad and Kashmir. All university students are included in the study.

Survey Procedure

The study employed a convenient sampling method.

Approach

A sample of three hundred students from the universities in Islamabad and Kashmir were given the questionnaires. The goal of the study was explained to each participant, and they were all requested to fill out a questionnaire. The participants were asked to respond honestly. Following participant data collection, the data was imported into the Statistical Package for Social Sciences (SPSS) for analysis.

Table 1: Sociodemographic Characteristics of Participants

Demographic variable		n	%
Gender	Men	162	53.8
	Women	139	46.2
Marital Status	Married	7	2.3
	Unmarried	293	97.7
Degree	Graduation	293	97.3
	Post-Graduation	7	2.3
Age	18-22	161	53.6
	Above 23	139	46.3
Family System	Nuclear	136	45.5
	Joint	164	54.5
Political Party Affiliation	Yes	55	18.3
	No	245	81.7
Family income	<40,000	26	8.6
	41000-60000	88	29.2
	61000-80000	80	26.6
	81000-100000	30	10.0
	>100000	76	25.3

Note: The demographic data presented in this table reflect the characteristics of the study participants.

There were 300 students in the sample, 162 of whom were male and 139 of whom were female, according to Table 1. According to the results, every student was older than 18. One hundred thirty-nine students were older than 23, while 121 students were between the ages of 18 and 22. Degree-level-based student classifications revealed that 2.3% of students were post-graduated and 97.7% of students had graduated. Since students from joint and nuclear family systems were included in the study, Table 1 demonstrates that students belong to two family system types. One hundred and sixty-four students belong to joint families while one hundred and thirty-six students belong to nuclear

families. Additionally, it demonstrates that the study's participants fall into two groups with respect to marital status: just seven students were married, while 293 students were single. Two hundred and forty-five of the three hundred students who were part of the study had no political affiliation, whereas forty-five had. Students from different socioeconomic backgrounds were included in the study.

Table 2: Psychometric Properties for Scales

Scale	M	SD	Range	Cronbach's a	Skewness	Kurtosis
Digital Literacy	162.50	13.38	162.5-93.37	.83	.063	-.126
Metacognitive Awareness	201.10	26.80	273.18-134.9	.95	.061	-.128
Critical Thinking	89.28	10.97	118.9-62.02	.89	.062	-.118
Susceptibility to Political Misinformation	36.26	7.06	55.33-18.76	.80	.053	-.145

Note: Cronbach's alpha coefficients are reported for each scale.

Table 2 shows reliability Analysis in population N=300, including variables, Susceptibility to political misinformation, metacognitive awareness, critical thinking and digital literacy. The Cronbach's alpha value for the digital literacy scale is .833. The Cronbach's alpha value for metacognitive awareness, critical thinking and susceptibility to political misinformation scale are .956, .891 and .808 which indicates that all scales are significantly reliable. The skewness and kurtosis values show that the data set is normal.

Table 3: Correlation matrix between CTS, SMPS, DLS and MAS

Variables	N	M	SD	CTS	SPMS	DLS	MAS
CTS	300	89.28	10.97	-			
SMPS	300	36.26	7.06	-.494**	-		
DLS	300	126.46	13.38	.460**	-.320**	-	
MAS	300	201.10	26.80	0.412**	-.364**	.409**	-

Note: CTS = Critical Thinking Scale, SMPS = Susceptibility to Political Misinformation Scale, DLS = Digital Literacy Scale MAS=Metacognitive Awareness Scale. **$p < 0.01$

Table 3 indicates that Critical Thinking Scale (CTS) has a strong negative correlation with the Susceptibility to Political Misinformation Scale (SMPS). A strong negative correlation between Critical Thinking Scale (CTS) and Susceptibility to Political Misinformation Scale (SMPS) suggests that individuals who report higher on Critical thinking are more likely to have less susceptibility to political misinformation. Moreover, a significant positive correlation exists between Critical thinking and metacognitive awareness while negative correlation exists between metacognitive awareness and susceptibility to political misinformation. Similarly, a positive correlation between Critical thinking and metacognitive awareness scale suggests that individuals who report higher levels of Critical thinking tend to report higher levels of metacognitive awareness. Likewise, digital literacy is positively associated with critical thinking and has negative correlation with susceptibility to misinformation.

Table 4: Regression Coefficients of Critical Thinking Scale, Susceptibility to Political Misinformation, Digital Literacy Scale and Metacognitive Awareness Scale

Variable	B	SE	t	p	95%CI
Constant	13.697	3.268	4.185	.000	7.244-20.11

CTS	.251	.036	6.947	0.000	.180-.322
MAS	.025	.015	-1.675	.004	-.0541-.044
SCS	1.569	.160	9.808	.000	1.254-1.883

Note: N=300, ***p<.001 CTS=Critical Thinking Scale, DLS=Digital Literacy Scale, MAS=Metacognitive Awareness Scale

Table 4 shows impact of critical thinking, digital literacy and metacognitive awareness on susceptibility to political misinformation. The R2 value of 0.155 tells that critical thinking explains 15.5% variance in the outcome variable that is susceptibility to political misinformation with F (1, 298) = 48.266, p>0.05. The findings revealed critical thinking significantly predicted susceptibility to political misinformation. The table also shows impact of metacognitive awareness on susceptibility to political misinformation with the R2 value of 0.069 which indicates that the metacognitive awareness predicted susceptibility to political misinformation and explained 6.9% variance in susceptibility to political misinformation with F (1, 298) =2.807, p<0.05. The results revealed that metacognitive awareness significantly predicted susceptibility to political misinformation. Likewise, the table also shows impact of digital literacy on susceptibility to political misinformation with the R2 value of 0.099 which indicates that the digital literacy significantly predicted susceptibility to political misinformation and explained 9.9% variance in susceptibility to political misinformation with F (1, 298) =29.23, p<0.05. The results revealed that digital literacy significantly predicted susceptibility to political misinformation.

Table 5: Regression Analysis for Mediation of Metacognitive Awareness between Critical Thinking and Susceptibility to Political Misinformation

Variable	B	95%CI	SE	β	R^2	ΔR^2
Step 1					0.074	.070***
Constant	20.461	(13.4-27.46)	63.55			
CTS	.173	(.095-.250)	0.039	0.272		
Step 2					0.118	.111***
Constant	26.261	(-3.27-16.63)	3.856			
CTS	.231	(.221-.837)	.042	.364		
MAS	-.055	(1.62-1.93)	0.016	-.230		

Note: CI=Confidence Interval, ***p<.001 CTS=Critical Thinking Scale, MAS=Metacognitive Awareness Scale

In step 1, the R^2 value of .074 revealed that the critical thinking has shown 7.4% variance in susceptibility to political misinformation with F (1,298) = 19.22, p<0.05. The findings revealed that critical thinking has significantly predicted susceptibility to political misinformation (beta=.272, p>0.05). In step 2, the R^2 value of 0.111 revealed that the 11.1% variance in susceptibility to political misinformation by critical thinking and metacognitive awareness with F (2, 29) = 16.09, p<0.05. The findings revealed that critical thinking (Beta=.364p<0.05) and Metacognitive awareness (Beta=.-.230, p<0.05) significantly predicted susceptibility to political misinformation. The delta R^2 value of .044 revealed 4.4% variance in Model 1 and Model 2 with delta F (1,297) =12.069, p<0.05. The

regression weights increased from .272 to .364 in step 2 but remained significant which shows mediation. Moreover, metacognitive awareness mediates between critical thinking and susceptibility to political misinformation.

Table 06: Moderating role of digital literacy between Critical thinking and Susceptibility to Political Misinformation

Variable	Model 1			Model 2		
	B	Beta	SE	B	Beta	SE
Constant	36.18		.410	36.152		
CTS	1.519	.224**	.455	1.516	.223**	.457
DTS	1.538	.219**	.471	1.549	.221**	.488
CTS * DTS				-.030	-.005	.339
R^2			.145			.145
ΔR^2						.000

P<0.05

Table shows the moderation of digital literacy between critical thinking and susceptibility to political misinformation. In Model 1, the R2 value of .145 revealed that predictor explained 14.5% variance in the outcome with F (2, 297) = 20.80, p<0.05. The results revealed that digital literacy (B=.224, p> 0.05) and critical thinking (B=.219, p<0.05) predicted susceptibility to political misinformation. These findings shows that the model 1 is significant. In Model 2, the R^2 value 0f .145 revealed that predictors explained 14.5% variance in the outcome with F (2, 296) = 20.803, p<0.05. The findings revealed that critical thinking (B=.223, p<0.05), digital literacy (B=.221, p<0.05), and critical thinking * digital literacy predicted susceptibility to political misinformation (B=.176, p>0.05). The ΔR^2 value of .000 revealed 0% change in the variance of Model 1 and Model 2 with F (1,296) =.009, p >0.05. Findings showed that digital literacy has not moderated the relationship between critical thinking and susceptibility to political misinformation.

Table 07: Moderating role of gender between Critical thinking and Susceptibility to Political Misinformation

Variable	Model 1			Model 2		
	B	Beta	SE	B	Beta	SE
Constant	36.059		.398	36.163		
CTS	2.846	.407**	.393	2.531	.361	.400**
Gender	-1.104	-.157**	.394	-1.103	-.157	.388**
CTS * gender				-1.103	-.176	.363**
R^2			.180			.209
ΔR^2						.029

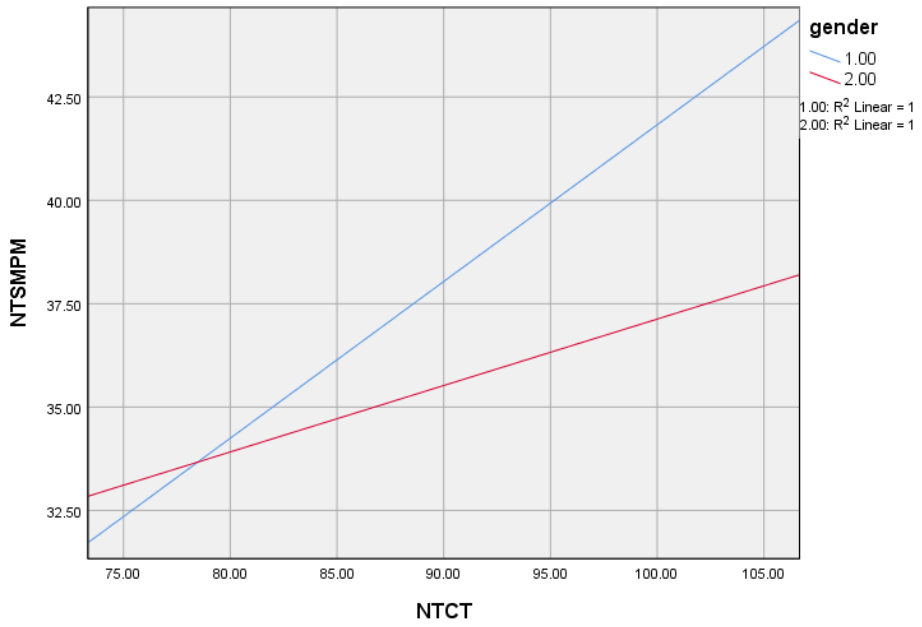
P<0.05

Table shows the moderation of gender between critical thinking and susceptibility to political misinformation. In Model 1, the R2 value of .180 revealed that predictor explained 18% variance in the outcome with F (2, 297) = 28.69, p<0.05. The results revealed that gender (B=-.157, p<0.05) and critical thinking (B=.407, p<0.05) predicted susceptibility to political misinformation. These findings shows that the model 1 is significant. In Model 2, the R^2 value 0f .199 revealed that predictors explained 19.9% variance in the outcome with F (2, 296) = 9.50, p<0.05. The findings revealed that critical thinking (B=.361, p<0.05), gender (B=-.157, p<0.05), and critical thinking * gender predicted susceptibility to political misinformation (B=-.176, p<0.05). The ΔR^2 value of .029 revealed 2.9% change in the variance of Model 1 and Model 2 with F (1,296) =22.92, p <0.05. Findings showed that

gender has moderated the relationship between critical thinking and susceptibility to political misinformation.

Mod graph:

The graph shows moderation of gender between critical thinking and susceptibility to political misinformation.



DISCUSSION

The goal of the current study was to determine how critical thinking affected the likelihood of being misinformed, as mediated by metacognitive awareness and moderated by gender and digital literacy. A straightforward sampling procedure was used to select a sample of 300 pupils. The Digital Literacy Scale (DLS), Metacognitive Awareness Scale (MAS), Critical Thinking Scale (CTS), and Susceptibility to Political Misinformation Scale were the instruments utilized in this study. SPSS was used to analyze all of the data. The alpha reliability coefficient, also known as internal consistency, for the critical thinking, metacognitive awareness, susceptibility to political misinformation, and digital literacy scales in this study is.891,.956, and.808, respectively. The reliability of every scale was demonstrated by these alpha coefficients.

The first hypothesis that states there is a significant negative association between critical thinking and susceptibility to political misinformation is accepted. It emphasizes how crucial cognitive abilities are for navigating the complicated information environment of today. This assertion is supported by experimental data from recent studies carried out in Colombia. According to the study, people who were better at critical thinking were less likely to believe political disinformation, which suggests that critical thinking protects against false information (List et al., 2024). People with critical thinking skills are able to critically examine information, challenge sources, and assess the veracity of assertions. In a time when disinformation can sway public opinion and democratic processes, this skill set is crucial (American Psychological Association, 2020). Fostering critical thinking can successfully lessen the impact of disinformation, especially in politically sensitive contexts, according to a systematic assessment of the literature (Babii, 2020).

The second hypothesis that there is a significant impact of critical thinking on sustainability regarding political misinformation is accepted. It highlights how cognitive abilities can create

educated citizens. According to research, developing critical thinking skills can result in greater sustained information consumption and a lower propensity to believe false information (List et al., 2024). In a time when disinformation is pervasive, critical thinking enables people to analyze and assess information methodically, which is essential (Weiss et al., 2020). People grow better at identifying biases and challenging the reliability of sources when critical thinking is encouraged, which leads to a more informed public conversation (Feixas, 2023).

The hypothesis that metacognitive awareness mediates the relationship between critical thinking and susceptibility to political misinformation is accepted. It implies that people who are conscious of their own thought processes are better able to assess information critically, which lessens their susceptibility to false information. According to research, critical thinking improves a person's capacity to examine their cognitive biases and decision-making procedures, which is essential for identifying false information (List et al., 2024).

Understanding one's own mental processes allows people to keep an eye on and control their cognitive activity. This is known as metacognitive awareness. Increased critical thinking abilities can result from this self-awareness, enabling people to more successfully evaluate the veracity of claims and challenge the accuracy of information sources (Gilmour, 2023). For example, it has been demonstrated that interventions that support metacognitive techniques improve critical thinking skills, which reduces vulnerability to political disinformation (Weiss et al., 2020).

The hypothesis that digital literacy moderates the relationship between critical thinking and susceptibility to political misinformation is rejected. Digital literacy may have an impact on how well this skill is used in online settings, even though critical thinking improves the capacity to recognize false information. According to research, digital literacy is linked to better judgment about the veracity of information, but it does not always stop people from spreading misleading information (Sirlin et al., 2024). According to a study conducted by researchers at MIT Sloan, people who are more technologically literate are still more likely to spread misleading information even when they are better able to distinguish between real and false information. This draws attention to a crucial discrepancy: being digitally literate does not guarantee appropriate sharing practices (Sirlin et al., 2024). Additionally, critical thinking abilities are necessary for assessing the reliability of claims and sources, but people might still be duped by false information if they lack strong digital literacy (Polizzi, 2018).

The hypothesis that gender moderates the relationship between critical thinking and susceptibility to political misinformation is accepted. According to Brookings (2023), gendered disinformation frequently uses misogynistic narratives to paint female politicians as unreliable or overly sentimental, which might increase them vulnerability to false information. This dynamic suggests that although critical thinking might improve women's capacity to critically assess information, systemic biases may nevertheless influence their interactions with false information (CFR, 2023).

Misogynistic narratives are frequently used in gendered disinformation to paint female politicians as unreliable or overly sentimental, which can increase their vulnerability to false information (Brookings, 2023). This dynamic suggests that women may still have systemic biases that influence their interactions with false information, even when critical thinking may improve their capacity to critically assess information (CFR, 2023).

CONCLUSION

The current study concludes that critical thinking significantly influences one's susceptibility to political misinformation, and that the relationship between critical thinking and susceptibility to political misinformation is mediated by metacognitive awareness. Gender is a substantial mediator of this association, while digital literacy does not. University students made up the study's sample. Additionally, critical thinking-focused therapies have demonstrated potential in debiasing people

and strengthening their capacity to separate fact from fiction (List et al., 2024). Promoting critical thinking becomes an essential tactic for both individuals and politicians as long as misinformation persists in impeding informed decision-making.

LIMITATIONS

Even though the study was authentically done, there are a few limitations that should be taken into account. The constraint is intended to guide future study toward improvement. Only university students were included in the limited sample. The study aimed at small levels of the effect of critical thinking on susceptibility to political misinformation and limited effect of mediator that is metacognitive awareness, whereas there are many other factors as well that can influence susceptibility to misinformation such as impulsivity etc. It is therefore recommended that a similar study be conducted in which other such factors can be explored and examined.

SUGGESTIONS

Future studies can examine the effect of critical thinking on vulnerability to political disinformation by collecting data from a large sample of colleges and institutions both nationally and provincially.Based on the findings of current studies professionals should spread awareness about rising rate of susceptibility to political misinformation and how dearth of critical thinking contributes to susceptibility to political misinformation. This susceptibility has potential negative impact on one's life. Policy makers can endorse critical thinking and validation elements in their policies to mitigate such sort of susceptibilities. Future researchers can increase generalizability if we increase sample size of the study.

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