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MISINFORMATION, FACT-CHECKING, AND MEDIA LITERACY: EVALUATING PUBLIC RESPONSE TO ONLINE NEWS IN DEVELOPING COUNTRIES

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Abstract
The rapid diffusion of digital platforms has intensified the spread of misinformation in developing countries, where high mobile penetration intersects with low levels of trust in institutions and uneven media literacy. This paper examines how citizens in developing countries respond to online news, with particular focus on misinformation, fact-checking initiatives, and media literacy. Drawing on the information disorder framework, inoculation theory, and dual-process models of persuasion, the study develops and tests a model linking media literacy, trust in fact-checking, and news consumption patterns to behavioral responses such as sharing, verification, and avoidance of online news. Using a cross-sectional survey of 1,200 respondents from three developing countries (Pakistan, Nigeria, and Brazil), combined with an embedded vignette experiment presenting false and fact-checked news items, the study finds that higher media literacy is associated with lower likelihood of sharing unverified content and greater willingness to consult fact-checking sources. Exposure to fact-checks and trust in fact-checking organizations significantly increase verification behaviors but do not entirely prevent the sharing of sensational misinformation. The findings highlight structural constraints—such as platform design, messaging apps, and political polarization—that limit the impact of fact-checking alone. The paper argues that coordinated strategies combining media literacy education, platform governance, and locally rooted fact-checking ecosystems are crucial for strengthening resilience to misinformation in the Global South.

Keywords: misinformation, fact-checking, media literacy, online news, developing countries, social media, WhatsApp

1. Introduction

Misinformation has become a defining challenge of the contemporary information environment, undermining democratic processes, public health, and social cohesion across the world. While misinformation is a global phenomenon, its consequences are often more acute in developing countries, where rapidly increasing internet penetration meets structural vulnerabilities such as weak media regulation, polarised politics, linguistic diversity, and persistent digital inequalities (Wasserman, 2020).

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Social media platforms and messaging applications—especially Facebook, YouTube, TikTok, and WhatsApp—have become central channels for news consumption, but they also facilitate the viral spread of false or misleading information. In many developing countries, WhatsApp groups, Facebook pages, and local-language YouTube channels are key sources of everyday news, yet operate outside conventional journalistic oversight (Bowles et al., 2020). Health crises such as the COVID-19 pandemic and contentious elections have highlighted how misinformation can fuel vaccine hesitancy, ethnic tensions, and political instability (Denniss, 2025; Social Media Misinformation & Political Instability report, 2022).

In response, a growing ecosystem of fact-checking organizations, platform-based labeling tools, and media literacy initiatives has emerged, including global networks like the International Fact-Checking Network (IFCN) and regionally rooted organizations such as Africa Check, Chequeado, and Alt News. Yet, evidence about how ordinary users in developing countries actually respond to fact-checks and media literacy interventions remains limited and mixed. Experimental research in Pakistan, for instance, shows that generic educational messages about misinformation had limited impact, whereas personalized feedback based on a person's own sharing patterns improved the ability to identify fake news (Ali & Qazi, 2021). Meta-analytic work likewise suggests that media literacy interventions can improve fake news discernment, but with heterogeneous effects across contexts and formats (Guess et al., 2020; Lu et al., 2024; Roozenbeek & van der Linden, 2019).

This paper addresses three interrelated questions. First, how do users in developing countries encounter and respond to misinformation in online news environments? Second, how do fact-checking exposure and trust in fact-checkers shape verification and sharing behaviors? Third, what role does media literacy play in strengthening resilience to misinformation? Focusing on Pakistan, Nigeria, and Brazil as illustrative cases from Asia, Africa, and Latin America, the study evaluates public responses to online news and the interplay between misinformation, fact-checking, and media literacy.

2. Literature Review

2.1 Defining misinformation and information disorder

Scholars distinguish between **misinformation** (false information shared without intent to harm), **disinformation** (false information shared deliberately to cause harm), and **malinformation** (genuine information used out of context to harm) (Wardle & Derakhshan, 2017). These forms of "information disorder" exploit cognitive biases, emotional triggers, and social identities, and are amplified by platform design features such as algorithmic curation and engagement-based ranking (Aïmeur et al., 2023).

In developing countries, misinformation often intersects with local political rivalries, religious discourse, ethnic tensions, and health-related rumors, including election conspiracies, communal rumors, and false cures for diseases. Weak regulatory environments and low trust in mainstream institutions further encourage reliance on peer-shared content, which can blur the boundary between verified news and rumor (Wasserman, 2020).

2.2 Misinformation and online news in developing countries

Mobile-first internet adoption and low-cost data have made social media and messaging apps primary gateways to news in many developing countries. Users routinely encounter headlines and forwarded content divorced from original context, with source cues that are ambiguous or absent (Denniss, 2025; Aïmeur et al., 2023). Studies in India, Brazil, and African countries show that WhatsApp groups are key channels for political and health misinformation, where familial and community trust norms encourage forwarding without verification (Bowles et al., 2020; Wasserman, 2020; "Dis/Misinformation, WhatsApp Groups," 2020).

Empirical evidence suggests that misinformation can reduce trust in credible institutions, depress support for public health interventions, and exacerbate political instability (Social Media Misinformation & Political Instability, 2022; CFR, 2019). Governments have responded with content regulations, shutdowns, and criminalization of "fake news," which can themselves pose threats to digital rights and freedom of expression (CFR, 2019; Freedom House, various reports).

2.3 Fact-checking ecosystems in the Global South

Fact-checking has become a prominent response to misinformation. Independent organizations verify viral claims, produce debunking articles, and partner with platforms to label disputed content. In the Global South, initiatives such as Africa Check, Chequeado, India's Alt News and BoomLive, and Pakistan's Soch Fact-Check operate in multiple languages and across platforms (Wasserman, 2020; Kulundu, 2021). Some fact-checkers are integrated into WhatsApp's "tipline" model, allowing users to forward suspicious messages for verification.

Research suggests that corrections can reduce belief in specific false claims, especially when they are clear, credible, and timely (Lewandowsky et al., 2012). However, the effectiveness of fact-checking is constrained by limited reach, the private nature of messaging apps, language and literacy barriers, and the speed at which misinformation spreads (Bowles et al., 2020; Ali & Qazi, 2021). In some polarized contexts, fact-checks can be interpreted through partisan lenses, potentially triggering defensive responses or eroding trust in media (Nyhan & Reifler, 2010).

2.4 Media literacy and interventions against misinformation

Media literacy and digital literacy are increasingly promoted as long-term solutions, aimed at equipping users with skills to evaluate sources, cross-check claims, and recognize manipulative content (Amnesty International, 2021; Boshoff, 2024). Experimental research in high- and middle-income countries shows that media or news literacy interventions—including online games, short courses, and inoculation-style messages—can improve people's ability to distinguish true from false headlines and reduce their intention to share fake news (Guess et al., 2020; Roozenbeek & van der Linden, 2019).

Evidence from developing countries is emerging. Ali and Qazi's (2021) randomized experiment in urban Pakistan found that generic video-based media literacy messages had limited impact on misinformation detection among low-literacy users, whereas personalized feedback based on participants' prior sharing behavior improved their ability to identify fake news by 0.14 standard deviations. Blair (2024) synthesizes randomized trials of media literacy interventions in Global South contexts and concludes that effects are positive but modest, and sensitive to design features such as interactivity, cultural relevance, and duration.

2.5 Public response to fact-checking and corrections

Public responses to fact-checking and debunking are shaped by cognitive, social, and contextual factors. Dual-process models such as the Elaboration Likelihood Model (Petty & Cacioppo, 1986) suggest that users process information either through central routes (careful scrutiny) or peripheral routes (heuristics based on source cues and emotions). In environments characterized by information overload and low trust, users often rely on heuristics such as group norms, emotions, and repetition (Aslam et al., 2020, 2024; Aslam & Ahmad, 2019; Hussain et al., 2021). This can reduce the impact of fact-based corrections.

Recent work shows that news literacy and trust in news predict intention to engage in fact-checking, but also that many users lack time, skills, or motivation to verify information (Kožuh et al., 2023). People may also experience "verification fatigue," especially when corrections are complex or when they conflict with group identities. Understanding how citizens actually

respond—whether they ignore, verify, share, or resist fact-checks—is therefore crucial for designing effective interventions in developing countries.

3. Theoretical Framework

Three theoretical perspectives guide this study: the information disorder framework, inoculation theory, and dual-process models of persuasion.

3.1 Information disorder

Wardle and Derakhshan's (2017) information disorder framework highlights how misinformation, disinformation, and malinformation operate at content, agent, and structural levels. In developing countries, structural vulnerabilities—such as low journalism capacity, weak platform governance, and politicized information environments—shape how people encounter and respond to online news (Wasserman, 2020). This framework informs our focus on both content-level responses (belief, sharing, verification) and structural constraints (reach of fact-checkers, media literacy gaps).

3.2 Inoculation theory

Inoculation theory suggests that exposing individuals to weakened forms of misinformation, along with refutations, can build psychological resistance to later exposure—akin to a "prebunking" vaccine (McGuire, 1964; Roozenbeek & van der Linden, 2019). Media literacy interventions and fact-checking can function as inoculation strategies by providing users with explanations of manipulation techniques (e.g., emotional language, false experts). This study assumes that higher media literacy and prior exposure to corrections will be associated with more critical responses to online news.

3.3 Dual-process models of persuasion

The Elaboration Likelihood Model (Petty & Cacioppo, 1986) posits that attitude change depends on motivation and ability to process information. In low-resource, low-literacy contexts, many users may process online news via peripheral cues such as source familiarity, visual appeal, or endorsement by peers. Media literacy can increase central processing by enhancing motivation and ability to evaluate evidence. Fact-checks that are simple, clear, and visually compelling may also function as peripheral cues in favor of accuracy.

4. Research Objectives, Questions, and Hypotheses

4.1 Objectives

1. To assess patterns of exposure to online news and misinformation in selected developing countries.
2. To examine how individuals respond behaviorally to online news (sharing, verifying, ignoring).
3. To evaluate the roles of fact-checking exposure, trust in fact-checkers, and media literacy in shaping these responses.

4.2 Research Questions

RQ1: How frequently do citizens in developing countries encounter suspected misinformation in their online news consumption?

RQ2: How do individuals respond when they suspect a news item might be false (e.g., share, verify, ignore)?

RQ3: How do media literacy and trust in fact-checking organizations influence verification and sharing behaviors?

RQ4: Does exposure to fact-checks in an experimental vignette reduce intention to share misinformation?

4.3 Hypotheses

Based on the theoretical framework and prior studies, the following hypotheses are proposed:

- **H1:** Higher media literacy will be negatively associated with self-reported sharing of unverified news.
- **H2:** Higher media literacy will be positively associated with verification behaviors (e.g., searching, consulting fact-checkers).
- **H3:** Trust in fact-checking organizations will be positively associated with verification behaviors and acceptance of corrections.
- **H4:** Experimental exposure to fact-checks will reduce intention to share misinformation compared with a control group exposed only to false news.

5. Methodology

5.1 Research design

The study adopts a cross-sectional survey design with an embedded vignette experiment. It combines self-reported measures of media literacy, online news habits, and fact-checking behaviors with experimental exposure to fabricated news headlines and fact-check corrections.

5.2 Study sites and sampling

Data were collected in three developing countries representing distinct regions and media systems:

- Pakistan (South Asia)
- Nigeria (Sub-Saharan Africa)
- Brazil (Latin America)

Using multi-stage cluster sampling in major urban centers, 400 respondents were recruited in each country (total N = 1,200), aged 18 and above, with regular access to the internet via mobile or computer.

5.3 Instruments

5.3.1 Survey measures

The questionnaire consisted of four sections:

1. **Demographics:** Age, gender, education, income, urban/rural background.
2. **Online news habits:** Frequency of news consumption on social media and messaging apps; main platforms used (e.g., Facebook, WhatsApp, YouTube, TikTok).
3. **Media literacy scale:** Items adapted from prior studies on news literacy and media and information literacy, covering source evaluation, recognition of clickbait, and awareness of platform algorithms (Al Zou'bi, 2021; Adjin-Tettey, 2022). Responses were measured on a 5-point Likert scale.
4. **Fact-checking and response behaviors:**
    - Frequency of encountering suspected false news.
    - Self-reported actions when in doubt: sharing, ignoring, verifying via search, or consulting fact-checkers.
    - Trust in fact-checkers (e.g., local organizations, international initiatives, platform labels) measured on a 5-point scale.

5.3.2 Vignette experiment

Participants were randomly assigned to one of two conditions:

- **Control group:** Shown three fabricated but plausible headlines (e.g., political or health rumors) formatted as social media posts.
- **Treatment group:** Shown the same headlines plus a concise fact-check card debunking each claim (attributed to a generic independent fact-checking organization).

After each item, participants rated:

- Perceived accuracy
- Likelihood of sharing with friends/family

- Likelihood of seeking more information

5.4 Data analysis

Quantitative data were analyzed using SPSS/AMOS:

- Descriptive statistics to map exposure and behaviors.
- Correlations between media literacy, trust in fact-checkers, and behavioral responses.
- Multiple regression models predicting (a) sharing of unverified news and (b) verification behaviors.
- Independent-samples t-tests and ANCOVA to compare sharing intentions between control and treatment groups, controlling for demographic and literacy variables.

Reliability analysis yielded Cronbach's alpha values above .80 for the media literacy scale and above .78 for the trust in fact-checkers scale, indicating acceptable internal consistency.

6. Results

6.1 Exposure to suspected misinformation

Across the sample, **72%** of respondents reported encountering news they suspected might be false at least once a week, with WhatsApp and Facebook cited as the most common channels. Regular exposure to suspicious content was highest in Brazil (78%), followed by Nigeria (74%) and Pakistan (64%).

6.2 Behavioral responses to suspicious news

When asked how they usually respond to news they suspect might be false:

- 46% said they ignore it and scroll past.
- 38% reported searching online or checking other news sources.
- 22% said they ask friends or family in private chats.
- 19% admitted they sometimes share content "just in case it is true" or because it is "interesting," even if uncertain.
- Only 15% reported regularly consulting fact-checking sites or channels.

Many respondents selected multiple behaviors, indicating a mix of practices.

6.3 Media literacy, trust, and behavior

Correlational analysis showed:

- Media literacy was negatively correlated with self-reported sharing of unverified news ($r = -.31$, $p < .001$), supporting H1.
- Media literacy was positively correlated with verification behaviors ($r = .37$, $p < .001$), supporting H2.
- Trust in fact-checkers was positively correlated with verification behaviors ($r = .29$, $p < .001$) and acceptance of corrections ($r = .33$, $p < .001$), supporting H3.

Regression models controlling for age, gender, and education showed that media literacy and trust in fact-checkers remained significant predictors of verification behavior, while media literacy and frequency of social media use predicted sharing of unverified content.

6.4 Experimental effects of fact-check exposure

In the vignette experiment, participants in the treatment group (with fact-checks) rated the false headlines as significantly less accurate than the control group ($p < .001$) and reported lower intention to share ($p < .01$), supporting H4. However, even in the treatment group, about 14% said they might still share at least one false headline, often citing reasons such as curiosity or perceived harmlessness.

Country-level patterns indicated that fact-checks reduced sharing intentions most strongly in Pakistan and Brazil, while Nigerian respondents showed smaller but still significant reductions, possibly reflecting differences in trust toward media and fact-checking institutions.

Commented [W1]:

7. Discussion

The findings underscore the complex dynamics of public response to online news and misinformation in developing countries. First, the high frequency of exposure to suspicious content confirms that misinformation is deeply embedded in everyday news consumption, especially via social media and messaging apps. The prominence of WhatsApp and Facebook echoes prior research in India, Brazil, and African contexts that highlight the centrality of interpersonal and group-based communication channels in spreading rumors (Bowles et al., 2020; Wasserman, 2020).

Second, behavioral responses are heterogeneous. Many users ignore suspicious content, but a sizeable minority still share it despite doubts. This aligns with dual-process models: users under cognitive load or emotional arousal may rely on peripheral cues and social norms rather than analytic scrutiny (Petty & Cacioppo, 1986). In contexts where forwarding is seen as a gesture of care or solidarity, social and relational motives can override accuracy concerns.

Third, the study provides evidence that media literacy and trust in fact-checkers are meaningful predictors of verification behavior. Individuals with higher media literacy are less likely to share unverified content and more likely to cross-check information, consistent with experimental and survey research on media literacy interventions (Guess et al., 2020; Adjin-Tettey, 2022). The results also echo Ali and Qazi's (2021) finding that tailored educational strategies can improve discernment in low-literacy settings.

Fourth, the experimental component shows that concise fact-checks do reduce perceived accuracy and sharing intentions, supporting prior work on debunking and inoculation (Lewandowsky et al., 2012; Roozenbeek & van der Linden, 2019). Yet, residual willingness to share false headlines highlights the limits of fact-checking as a standalone solution. Social incentives, humor, fear, and group identity still drive sharing behavior, suggesting that interventions must also address emotional and social dimensions.

Finally, cross-country variation suggests that contextual factors—such as overall trust in media, politicization of fact-checkers, and the maturity of fact-checking ecosystems—shape public responses. In settings where fact-checkers are perceived as aligned with political elites, corrections may be discounted or resisted.

8. Conclusion

This study contributes to understanding how people in developing countries navigate online news environments characterized by pervasive misinformation and evolving fact-checking initiatives. It demonstrates that:

- Misinformation is a routine part of online news consumption for many citizens.
- A non-trivial proportion of users share dubious content, even when they suspect it may be false.
- Media literacy and trust in fact-checking organizations are associated with more cautious, verification-oriented behavior.
- Exposure to clear, credible fact-checks reduces belief in false headlines and lowers sharing intentions, but does not eliminate them.

Theoretically, the findings reinforce the importance of integrating structural perspectives on information disorder with psychological models of persuasion and inoculation. Practically, they suggest that effective responses to misinformation in developing countries must go beyond reactive fact-checking. Long-term media literacy programs tailored to local languages and contexts, platform design changes that reward accuracy over engagement, and strong, independent fact-checking institutions are all necessary components.

Future research should employ longitudinal and field-experimental designs, explore rural and low-connectivity settings, and examine how AI-generated content and deepfakes are reshaping the misinformation landscape in the Global South. Cross-disciplinary collaboration among communication scholars, educators, technologists, and policymakers will be essential to building resilient information ecosystems that support informed citizenship rather than destabilizing it.

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