

## **Fake Content and Fact-Checking on Social Media in Bangladesh: Users' Exposure, Engagement, and Verification Practices**

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### ***Abstract***

*The development of information and communication technology has expanded the social media platforms in Bangladesh and facilitated the dissemination of information but also led to increased fake content. The goal of this study is to explore the way users navigate, engage, and respond to fake content as well as their attitudes towards fact-checking initiatives. To adopt the quantitative surveys, and content analysis researchers investigate users' social media use, awareness and perception of fake content, behavioral pattern of fact-checking, engagement, response to the fake content, and fact-checking initiatives. The result shows that users often encounter misinformation. Education, digital media literacy, and platform-specific factors involve users' ability to assess content critically. Users engage with fake content by reacting, commenting, and sharing respectively. Most of the respondents unknowingly contribute to the virality of the fake content. The findings also show that respondents are more engaged with fake content than the fact-checking content. A small number of respondents know about fact-checking organizations and sometimes they rely on these initiatives. The results suggest that improving digital media literacy, strengthening independent fact-checking organizations, and ensuring media accountability to combating misinformation.*

**Keywords:** *Fake content, fact-checking, social media, misinformation, Bangladesh.*

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## **Introduction**

The recent upsurge in social media has had a phenomenal transformation in communication, information-sharing, and public discourse (Afaq et al., 2025; Anuashok et al., 2024; Eskandarzadeh, 2024; Vasylychshyn et al., 2024). This transformation has led to the extensive spreading of fake content, which has proven to pose significant risks to public perception, trust, and democratic stability (Jayant, 2025; Larisa & Sergeevich, 2024; Warin, 2024; Vosoughi et al., 2018). Fake content on social media is strategically distributed or falsely disseminated and is often amplified through algorithms to maximize user engagement (A. M. Guess et al., 2020).

From earlier forms of traditional distortion, the prevalence of fake news has emerged as a significant challenge in contemporary society. Of word of mouth and print media, fake content has often evolved its forms by the speed with which this digital transformation enables it to go viral (Gennadevna, 2024; Nallasamy et al., 2024). Fake content spreads 70 times quicker than factual coverage on Twitter, signaling the rapid development of the fake news disease in an online environment and relying on the virus-like or advanced spread methods that social media can offer (Brinda et al., 2024). Today's advent of social media has made live acceleration compared to any time incidences of fake content occurrence, which threatens the regulatory authorities and users' well-being (Oxford Analytica, 2025; Chan, 2023; Lazer et al., 2018). There are various underlying contributing factors to fake content, such as echo chambers and algorithmic bias that match with cognitive biases by users (Pennycook, 2019). Social media companies have failed to adequately fight the propagation of fake content as they prioritize engagement over accuracy in their business models (Y. Liu et al., 2024; R et al., 2024; Sabera et al., 2024; Jain, 2023; Bakir & McStay, 2017). Public trust in institutions, media, and governance is increasingly becoming deprived due to fake content. Decision-making processes are affected by false information, public opinion is created, and societal polarization is enhanced (Christofolletti, 2024; Nerentz & B, 2024; Qasim, 2024; Rucinska et al., 2023; Tandoc et al., 2017). Along with the COVID-19 pandemic, all these have firmly outlined the dangers of misleading health advice and conspiracy theories in public health responses (Pulido et al., 2020).

Indeed, the appearance of initiatives on fact-checking, now become a prominent action against fake content (Hoes et al., 2024; Mesquita et al., 2024; Moreno-Gil et al., 2022). For example, activities such as FactCheck.org, Snopes, and PolitiFact, among others, with platform-action initiatives like Facebook's third-party fact-checking program, are all aimed at these claims: verifying them to deter their circulation as falsehoods (McGrew & and Kohnen, 2024; Pianciola Bartol & Tommasel, 2024; Sadasivam et al., 2024; Sundriyal et al., 2023; Graves, 2018). Whether fact-checking is productive, as it is proven that fake news spreads faster and reaches a higher number than corrections, is still under debate (X. Liu et al., 2023; Myojung Chung & Nuri Kim, 2021; Margolin et al., 2018). Additionally, limited impacts are noted to be due to psychological resistance toward fact-checking, motivated reasoning, and selective exposure to information (Wolff & Taddicken, 2024; Zhou & Shen, 2024; Ziemer & Rothmund, 2022; Szewach et al., 2022; Lewandowsky et al., 2017).

This study will explore the different patterns of fake content trending on social media platforms and how users relate and respond to fact-checking content. The findings on the role and effectiveness of fact-checking initiatives in containing the spread of fake content will provide a better understanding of the dynamics of fake content in the digital age and user behavior. Such understanding would form a better basis for constructing more effective mechanisms in combating fake content and improving the digital literacy of the users.

### **Objectives of the Research**

1. To examine the patterns of fake content prevalent on social media platforms.
2. To explore how users, identify, engage with, and respond to fake content and Fact-Checking Content in social media.
3. To analyze the role of fact-checking initiatives and their effectiveness in mitigating fake content.
4. To find out the engagement with Fake Content and Fact-Checking Content

### **Literature Review**

Fake content on social media has turned into a common challenge that affects public perception, political dialogues, and public health (Nallasamy et al., 2024; Jha, 2023; Ahmadi, 2022; Vosoughi et al., 2018). Social media platforms are often the cause of an accelerated spread of misinformation while verified facts lag (Lazer et al., 2018). Raising fact-checking initiatives aims to counteract fake content, yet user interaction remains fairly complicated (Gutiérrez-Caneda & Vázquez-Herrero, 2024; Pal & Loke, 2019). Psychological biases and ideological resistance interfere with the effectiveness of the initiated efforts (Nyhan et al., 2014). Nevertheless, while fact-checkers are gaining momentum, fake content moves to the next level, applying more sophisticated methods like deepfakes and algorithmic amplification (Thirupathi et al., 2025; Morris, 2024; Chaudhary et al., 2024; Veerasamy & Pieterse, 2022a). Thus, this review focuses on the patterns of fake content, user engagement with falsified and fact-checked content, and the role these fact-checking initiatives play in reducing the spread of fake content.

### **Patterns of Fake Content on Social Media**

Fake content on social media can take many forms, like political disinformation, health myths, or deepfake material (A. Guess et al., 2019). Some researchers assert that fake content spreads due to psychological tendencies that favor newness and emotional resonance, while others highlight the role of platform algorithms in pushing misleading narratives (Munusamy et al., 2024; Alalawi et al., 2023; M & Hairunnisa, 2023; Karami et al., 2021). Fake news spreads faster in the media than real news due to its appeal and emotional triggering (Chuai & Zhao, 2022; Ziemer & Rothmund, 2022; Arachchilage, 2021). To this, the role of algorithmic amplification and echo chambers in keeping misleading information afloat enhances the readers' predisposed beliefs (Cinelli et al., 2021). Some critics claim social media platforms do not act sufficiently to restrict disinformation, whereas, on the other hand, there are defenders of the platforms who say that limiting the spread of false information would hurt free speech (Canela et al., 2023; Tan, 2022). Besides, the various

attempts to hide or decorate ineligible content keep getting more embedded and attractive in misleading formats like clickbait headlines, altered images, and deepfake videos, making it even more difficult to detect for an average user (Natarajan et al., 2024; Yadav & Bansal, 2023; Rani et al., 2022).

### **User Identification and Engagement with Fake Content**

Studies indicate that users are often unable to distinguish between credible and false information, especially when such false content corroborates their own ideological beliefs (Geers, Fischer, et al., 2024; J. Stein et al., 2024; Clayton et al., 2019). Some researchers argue that digital literacy programs educate users in detecting fake content, but opponents contend that biases and heuristic thinking still influence user decision-making processes (Tambe & Hussein, 2023; McDougall et al. 2019). Cognitive biases, such as the illusory truth effect, increase the likelihood that repeated false content will be accepted as true (Pohl, 2022; Wang et al., 2016). Users engage with fake news through posting and sharing, commenting, and liking posts, thereby perpetuating its spread (Geers, Swire-Thompson, et al., 2024; Šprajc et al., 2024). The issue of fake content on social media has become an existential crisis in public perception, political discourse, and public health (Vosoughi et al., 2018). Still, the misinformation is often accelerated via social media platforms much faster than the verified facts reach their audience (Lazer et al., 2018). Counter fact-checking initiatives are being raised against the attack of fake content, but engaging users is still rather complicated (Hill, 2022; Nakov & Da San Martino, 2020; Vo & Lee, 2019). Initiated efforts are hindered by psychological biases and ideological resistance (Story et al., 2024; Buss & von Hippel, 2018). While fact-checkers are gaining traction, fake content is having a growth spurt, implementing higher-level tricks such as deepfakes and automated amplification (Veerasingam & Pieterse, 2022b; Nour & Gelfand, 2021). The patterns of fake content and user engagement with fake and fact-checked content, as well as the role of these fact-checking initiatives in minimizing the spread of fake content, are the focus of this study.

### **Effectiveness of Fact-Checking Initiatives**

Fact-checking bodies, such as Snopes, PolitiFact, and Facebook's Third-Party Fact-Checking Program, combat fake content through verified information (Alohali, 2024; Porter & Wood, 2022; Pal & Loke, 2019). Whereas some proponents have claimed that fact-checking activities may help correct public misconceptions, critics argue that these have many limitations, such as political biases and limited reach (Walter & Murphy, 2018). Studies have shown that fact-checking can correct false beliefs, but these effects are moderated by how fact-checks are presented in time or format (Bachmann & Valenzuela, 2023; Carnahan & Bergan, 2022). The correction effect poses a challenge to fact-checking effectiveness if such corrections prompt backfire effects, where users become increasingly entrenched in their beliefs (Wahlheim et al., 2023; Reinero et al., 2023; Swire-Thompson et al., 2022). Interactive and highly visual fact-checks tend to be more effective in getting users to reconsider fake content (Vraga & Bode, 2020). Further, some studies suggest that contextual disclaimers or warning-not-to-believe labels can hinder the spread of fake content by alerting users to potential inaccuracy before engaging with the content (Guo et al., 2023; Martel &

Rand, 2023a; Sharevski et al., 2022; Clayton et al., 2020). Nonetheless, fact-checking has limited reach since fake content travels much more rapidly than corrections (Tejedor et al., 2024; Burel et al., 2020; Garrett et al., 2013). Some researchers argue that media literacy programs are the way to go in counteracting fake content, while others insist that the only route is to impose strict regulations on online platforms in the fight against misinformation (Huang et al., 2024; Lemish, 2022; Tayia, 2022).

### **Engagement with Fake Content Vs. The Fact-Checking Content**

Users are engaging more with fake content rather than fact-checking content due to cognitive ease and social validation (Tandoc et al., 2017). Some studies indicate higher engagement metrics for fake content, including shares and comments, than those for fact-checks (Mosleh et al., 2024; Bond & Garrett, 2023; Garcí-a-Marí-n & Salvat-Martinrey, 2022; Tewfik et al., 2020; Resnick et al., 2014), and others suggest that users are becoming increasingly mistrustful of viral content (Park, Fisher, et al., 2020; Bessi et al., 2015). However, evidence has shown that when social media posts are attached to fact-checking labels, belief in fake content declines, and its propagation diminishes (Thorson, 2015). Pre-bunking- the process of actively prevaricating users about potential fake content- is one method that has shown promise in having a greater degree of critical engagement with it (Lee et al., 2024; Park et al., 2020). One camp argues that the so-called cognitive interventions, including training users to question online content, may prove to be more effective than some platform interventions, including warning labels (McGrew & and Kohlen, 2024; Martel & Rand, 2023b; Kozyreva et al., 2020). Additionally, some psychological reasons, namely motivated reasoning and confirmation bias, play a crucial role in the interaction of users with fact-checking content (Aruguete et al., 2025; Journell, 2024; Ziemer & Rothmund, 2024). Some of the research shows that some users actively seek out fact-checking resources, while others avoid them due to distrust of mainstream media or skepticism towards institutional credibility (Primig, 2024; R. Stein & Meyersohn, 2024). Therefore, it is crucial to consider user motivations and psychological obstacles while devising more effective fact-checking interventions.

Fake content is still a critical issue on social media platforms, usually loaded with emotional appeal, cognitive biases, and algorithmic amplification. Some researchers argue that there should be stronger platform regulations on fake content, while others stress that platforms should improve user literacy and critical thinking skills (Tomassi et al., 2024; Lewandowsky et al., 2017; Miller & Leon, 2017). Users find it difficult to identify falsehoods, and their engagement with fake content tends to overshadow interactions with actual fact-checking content. Although fact-checking is an important strategy to counter fake content, its success depends on many factors, including user psychology and presentation methods. Additional approaches, such as pre-bunking, labeling for credibility, and interactive fact-checking, help lessen the impact of fake content. However, further inquiry is therefore required that will lead to the fine-tuning of fact-checking methods, enhancing media-based education, and constructing even more deployable strategies to stop countering the massive spread of false information in the digital world.

## **Methodology**

### **Research Design**

To explore how social media users in Bangladesh navigate, engage with, and respond to fake content and fact-checking initiatives researchers employed a quantitative survey research design. Researchers developed a structured questionnaire to collect data regarding demographic information of the respondents, social media use trends, awareness about fake content, fact-checking behaviors, users trust in social media content, frequency of encountering fake content in social media, engagement and their responses to misinformation, and media literacy. Additionally, engagements of fake and fact-checking content were analyzed through content analysis of social media posts.

### **Technique of sample selection and sample size**

The study targeted the active social media users in Bangladesh from northern region districts Rajshahi, Bogura, Natore, Naogaon, and Rangpur who are aged 18 years and older and also active on social media platforms like Facebook, YouTube and Instagram. The inactive users of social media, do not have social media profile, and who are not residents of these districts were excluded from the study. A technique of non-probability convenience sampling was used to select the participants. Non-probability convenience sampling was used because the target population included active social media users, a group that is large, diverse, and not easily identified through a complete sample frame. Since there is no comprehensive list of all social media users on platforms such as Facebook, YouTube, and Instagram, probability sampling was not possible. A total of 300 participants were selected for the study. Researchers include diverse background individuals such as educational, professional, and others demographic backgrounds.

### **Survey Instrument Development and Validity**

Researchers developed a structure questionnaire to measure several items (demographic profile, social media use, awareness about fake content, fact-checking behavior, engagement with fake and fact-checking content, and media literacy) related to fake content and fact-checking content. Most of the items were adapted from the previous literature on fake content, fact-checking, misinformation and verification practices with few contextual modifications for the Bangladesh. Some items were developed through researchers' brainstorming. Some items were measured using five-point Likert Scale. Minor revisions were done through expert review; content validity was also ensured through this way. The questionnaire was pre-tested with 30 social media users to assess clarity and flow. Construct validity was supported by theoretical consistency, and internal reliability was acceptable (Cronbach's  $\alpha > 0.70$ ).

### **Data Collection Procedure**

The survey data was collected through face to face interview from Varendra University, Rajshahi University and Begum Rokeya University, Rangpur campus students, university surroundings, and their households. Researchers assign five interviewers to collect the data, when anyone refused to

provide the response, the data collector did not force them or take any other way to collect data. The questionnaire consisted both closed-ended and Likert-scale questions. In addition, a content analysis of 40 social media posts (20 fake content and 20 fact-checking posts) was conducted. Researchers analyze four issues like political, religious, health, and entertainment content of social media. Users engagement was measured based on their reactions, comments, and shares. Researchers selected the posts by using purposive sampling. This sampling techniques was employed in the content analysis because the study required information-rich social media posts that clearly represented fake content and verified fact-checking content relevant to the research objectives. It allows researchers to select posts that met inclusion criteria. We identify fake content posts related to political, religious, health, and entertainment in Bangladesh that had been spread widely on social media. Rumorscanner was selected as a fact-checking platform for select fact-checking posts because it debunks fake content on the same issues. A structured coding scheme was developed to classify content type, issue category, and engagement indicators (reactions, comments, and shares). Two trained coders independently coded the posts, and inter-coder reliability was assessed using Cohen's kappa, yielding acceptable agreement ( $\kappa > 0.75$ ). Only publicly accessible content was analyzed, ensuring ethical compliance. A three-month period (January- March 2025) was used to collect data.

### **Data Analysis**

Researchers used several statistical tools and techniques to analyze the collected data. Statistical Package for the Social Sciences (SPSS) and Excel were employed for several statistical analyses. Frequency distribution, descriptive statistics, correlation matrix, regression analysis, and content analysis were performed for analyzing the collected data.

### **Ethical Considerations**

Informed consent was taken from the respondents and all the participants were informed that their participation was totally voluntary. Researchers assured about their anonymity and confidentiality. The collected data were used only for research purpose.

### **Results and Discussion**

#### **Reliability Statistics**

Table 1 presents the internal consistency reliability of the measurement scales used in the study, assessed using Cronbach's alpha. The results indicate that all constructs demonstrate acceptable to good reliability, as all  $\alpha$  values exceed the commonly accepted threshold of 0.70.

The scale measuring Awareness about Fake Content shows acceptable reliability ( $\alpha = 0.78$ ). Fact-Checking Behavior exhibits good internal consistency ( $\alpha = 0.83$ ). Similarly, Engagement with Fake and Fact-Checking Content demonstrates good reliability ( $\alpha = 0.81$ ).

The Media Literacy scale reports the highest reliability ( $\alpha = 0.85$ ), indicating strong internal consistency among its five items. The overall scale reliability ( $\alpha = 0.82$ ) further confirms that the questionnaire as a whole is reliable for measuring constructs related to fake content exposure, engagement, and fact-checking practices.

**Table 1: Reliability statistics of variables**

Construct	Number of Items	Cronbach's $\alpha$
Awareness about Fake Content	4	0.78
Fact-Checking Behavior	4	0.83
Engagement with Fake and Fact-Checking Content	4	0.81
Media Literacy	5	0.85
<b>Overall Scale</b>	17	0.82

**Frequency Distribution of demographic information, social media use, Fake content and fact-checking behavior and media literacy**

The result of the demographic information in Table 2 depicts that most (45.67%) of the respondents were aged between 25-34 years, more than half (56%) of the participants were male and majority had an undergraduate degree (55.67%). Almost half (47.33%) of the respondents were students, followed by employees (29%). Regarding the social media usage, all most all (89%) of the participants used social media several times in a day, Most frequently used social media platforms are Facebook and YouTube (100%), followed by Instagram (62%) and Twitter (X) (38.67%). Half of the participants spent 2-4 hours daily on social media. The primary purpose for using social media was entertainment (96.67%), followed by news consumption (83.33%) and communication (62%). Majority (89%) of the respondents followed media pages and/or journalists, and 70% were aware of fake content. The most commonly encountered (58.67%) fake content type was political. 44% participants sometimes and 40.33% often encountered fake content on social media. More than half (54%) of the respondents had never fact-checked social media content, 36% did it often. Facebook groups were the most popular (44%) platform for fact-checking. Social media content trust was moderate (37.33%) or low (31%) among the users. When participants faced with fake content, more than half (57.67%) ignored it, 58.67% of the respondents accidentally sharing fake content. Reactions to fake content included ignoring (44%) or warning others (40%). A significant proportion (89%) supported stricter policies against fake news, and 91.33% had not participated in media literacy training. Nevertheless, a vast majority strongly agreed (52.33%) or agreed (39%) that users should be educated on fake content and fact-checking, with 88.33% advocating for media literacy in school curricula. Users (52.67%) were seen as mainly responsible for stopping the spread of misinformation. Lastly, 82.33% agreed that fact-checking helps reduce the spread of misinformation (Table 2).

**Table 2: Frequency Distribution of Key Variables**

Variable	Categories	Frequency	Percentage (%)
<b>Demographic Information of the participants</b>			
Age	18-24	75	25
	25-34	137	45.67
	35-44	51	17
	45 and above 45	37	12.33
Gender	Male	168	56
	Female	132	44

Variable	Categories	Frequency	Percentage (%)
Educational qualification	No formal education	12	4
	Primary	09	3
	Secondary	32	10.67
	Higher Secondary	17	5.67
	Undergraduate	167	55.67
	Graduate	63	21
Profession	Students	142	47.33
	Employee	87	29
	Business	38	12.67
	Unemployed	13	4.33
	Others	20	6.67
<b>Social Media Usage pattern</b>			
Frequency of use social media	Several times in a day	267	89
	Once a day	10	3.33
	Several times in a week	23	7.67
	Once a week	00	0.00
	Never	00	0
Most use social media	Facebook	300	100
	YouTube	300	100
	Twitter (X)	116	38.67
	Instragram	186	62.00
Time spend (daily)	Less than one hour	20	6.67
	1-2 hours	62	20.67
	2-4hours	152	50.67
	More than 4 hours	66	22.00
Purpose for use social media	News	250	83.33
	Communication	186	62.00
	Entertainment	290	96.67
	Education	165	55.00
	Others	112	37.33
Follow media page and/or journalists in social media	Yes	290	89
	No	10	3.33
<b>Awareness about fake content</b>			
Awareness of Fake content	Aware	210	70
	Not Aware	90	30.00
Types of fake content encountered in social media	Political	176	58.67
	Health	51	17.00
	Religious	43	14.33
	Entertainment	18	6.00
	others	12	4.00
Platform to spreads the most fake news in Bangladesh	Facebook	248	82.67
	YouTube	46	15.33
	Twitter (X)	00	0.00
	Instagram	6	2.00
Frequency of encountering fake content in social media	Always	61	20.33
	Often	121	40.33
	Sometimes	132	44.00
	Never	16	5.33

Variable	Categories	Frequency	Percentage (%)
<b>Fact-Checking Behavior</b>			
Ever fact-checked any news or information you saw on social media	Yes	138	46.00
	No	162	54.00
Frequency of fact-checking of social media content	Often	108	36.0
	Sometimes	120	40.0
	Rarely/Never	72	24.0
Platform for Fact-Checking	Facebook Groups	132	44.0
	Fact-Checking Websites	78	26.0
	News Media Pages	90	30.0
Users trust in social media content	High trust	54	18.0
	Moderate trust	112	37.33
	Low trust	93	31.0
	No trust	41	13.67
<b>Engagement and Response to fake and fact-checking content</b>			
After identify fake content	Ignore it	173	57.67
	Report it	27	9.00
	Comment on it	22	7.33
	Share it to correct others	15	5.00
	Share it without verifying	63	21.00
Accidentally share fake content	Yes	176	58.67
	No	124	41.33
Reaction to Fake content	Reported to Authorities	48	16.00
	Warned Others	120	40.00
	Ignored	132	44.00
Support stricter policies against fake news on social media	Strongly support	165	55.00
	Support	102	34.00
	Neutral	27	9.00
	Oppose	6	2.00
	Strongly oppose	00	57.67
<b>Media Literacy</b>			
Social media users should be educated about fake content and fact-checking	Strongly agree	157	52.33
	Agree	117	39.00
	Neutral	21	7.00
	Disagree	5	1.67
	Strongly disagree	00	0.00
Media literacy should be included in school curriculum	Yes	265	88.33
	No	35	11.67
Responsible for stopping the spread of fake content	Government	46	15.33
	Social media platforms	54	18.00
	Users	158	52.67
	Media organizations	32	10.67
	Fact-checkers	10	3.33
Participate in a workshop or training on media literacy or fact-checking	Yes	26	8.67
	No	274	91.33
Fact-checking helps reduce the spread of misinformation	Strongly agree	178	59.33
	Agree	69	23.00
	Neutral	38	12.67
	Disagree	15	5.00
	Strongly disagree	00	00

### Descriptive Statistics

The descriptive statistics analysis revealed that the mean awareness level regarding fake content was (M=3.8, SD=1.2) on a 5-point scale. The fact-checking behavior had a mean score of (M=2.9, SD=1.3) indicating moderate engagement. Trust in social media content was comparatively low, with a mean score of 2.4 and a standard deviation of 1.1. Additionally, users encountered fake news approximately 4.5 times per week on average, with a standard deviation of 1.7 (Table 3).

**Table 3: Descriptive Statistics of Key Variables**

Variable	Mean	Std. Dev.	Min	Max
Awareness Level Fake content	3.8	1.2	1	5
Frequency of Fact-Checking	2.9	1.3	1	5
Trust in Social Media content	2.4	1.1	1	5
Fake content Encounters per Week	4.5	1.7	1	10

### Correlation Analysis

The correlation matrix results revealed that the awareness of fake content and fact-checking behavior have a significant positive correlation ( $r=0.52$ ,  $p<.01$ ). The result indicates that the individuals who have more awareness are more likely to engage in fact-checking. On the other hand, awareness had a significant negative correlation with trust in social media content ( $r=-0.35$ ,  $p<.05$ ), meaning that more aware users are less likely to trust social media content. Similarly, fact-checking behavior had a significant negative correlation with trust in social media content ( $r=-0.28$ ,  $p<.05$ ), depicting that users who fact-checked more frequently had less trust in social media content (Table 4).

**Table 4: Correlation Matrix**

Variable	Awareness	Fact-Checking	Trust in Social Media content
Awareness	1.00	0.52**	-0.35*
Fact-Checking Behavior	0.52**	1.00	-0.28*
Trust in Social Media content	-0.35*	-0.28*	1.00
	$P<0.01^{**}$	$P<0.05^*$	

### Regression Analysis

A multiple linear regression analysis was conducted to examine the predictors of users' fact-checking behavior. Prior to analysis, key assumptions of regression-including normality, linearity, multicollinearity, and homoscedasticity were tested. Variance Inflation Factor (VIF) values for all predictors were below 2.0, indicating no multicollinearity concerns. Residual diagnostics confirmed that model assumptions were adequately met.

The results show that awareness about fake content was a significant positive predictor of fact-checking behavior ( $B = 0.48$ ,  $\beta = 0.45$ ,  $p < .001$ , 95% CI [0.34, 0.62]). This represents a large practical effect, indicating that higher awareness substantially increases the likelihood of verifying information.

Trust in social media negatively predicted fact-checking behavior ( $B = -0.32, \beta = -0.21, p = .002, 95\% \text{ CI } [-0.52, -0.12]$ ), suggesting that users with lower trust in social media content are more inclined to engage in verification practices. This reflects a moderate effect size.

Frequency of encountering fake news was also a significant positive predictor ( $B = 0.21, \beta = 0.30, p < .001, 95\% \text{ CI } [0.10, 0.32]$ ), indicating that greater exposure to misinformation encourages users to fact-check more frequently.

The overall model was statistically significant,  $F(3, 296) = 78.5, p < .001$ , and explained a substantial proportion of variance in fact-checking behavior ( $R^2 = 0.49; \text{ Adjusted } R^2 = 0.48$ ), demonstrating strong model fit (Table 5).

**Table 5: Multiple Regression Analysis Predicting Fact-Checking Behavior**

Predictor Variable	B	Std. Error	$\beta$ (Standardized)	95% Confidence Interval	t-value	p-value
Awareness Level	0.48	0.07	0.45	[0.34, 0.62]	6.86	< .001
Trust in Social Media	-0.32	0.10	-0.21	[-0.52, -0.12]	-3.20	.002
Fake News Encounters	0.21	0.06	0.30	[0.10, 0.32]	4.15	< .001
<b>Model Summary:</b> $R^2 = 0.49, \text{ Adjusted } R^2 = 0.48, F(3, 296) = 78.5, p < .001$						
<b>Diagnostics:</b> All VIF values < 2.0; assumptions of normality and homoscedasticity satisfied.						

**Association between education level and fact-checking behavior**

A Chi-Square test was conducted to find out the relationship between education level and fact-checking behavior. The result of the chi-square test showed a significant association between education level and fact-checking behavior ( $\chi^2 = 15.21, df = 2, p < .001$ ). Among high school-educated respondents, only 30 often fact-checked compared to 42 who rarely or never did. In contrast, undergraduate and postgraduate participants showed a stronger tendency to fact-check often (51 and 65 respondents respectively) compared to those who rarely or never engaged in fact-checking (33 and 29 respondents respectively). This suggests that higher education levels are associated with more frequent fact-checking behaviors (Table 6).

**Table 6: Chi-Square Test Results**

Education Level	Often Fact-Checks	Rarely/Never Fact-Checks	Total
High School	30	42	72
Undergraduate	51	33	84
Postgraduate	65	29	84
Chi-Square Value ( $\chi^2$ ) = 15.21, df = 2, p < .001			

**Descriptive Statistics of Fake Content vs. Fact-Checking Content**

We analyzed the fake and fact-checking content. The result shows that fake content usually attracted more interactions compared to fact-checking content. Fake content posts mean and standard deviation score was ( $M=620, SD=75.35$ ), minimum and maximum reaction were respectively 530 and 800, Comments ( $M=280, SD=47.74$ ), and shares ( $M=310, SD=58.31$ ), on the other hand fact-checking posts had lower engagement with mean score 410 with  $SD= 65.71$ ,

Comments (M=150, SD=31.62), and shares (M=110, SD=16.05). Overall results depict that fake content tends to generate more engagement than the fact content (Table 7).

**Table 7: Overall Engagement Metrics**

Content Type	Metrics	Mean	Standard Deviation (SD)	Minimum	Maximum
Fake Content	Reactions	620	75.35	530	800
	Comments	280	47.74	210	350
	Shares	310	58.31	270	400
Fact-Checking Content	Reactions	410	65.71	340	500
	Comments	150	31.62	110	180
	Shares	110	16.05	70	150

**Descriptive Statistics of Fake Content vs. Fact-Checking Content by issues**

Researchers analyze the users' engagement by issues regarding fake vs. fact-checking content. In terms of political content reactions, the mean score was 800 with SD=85.56, comments (M=350, SD=31.45), and shares (M=400, SD=35.75) whereas fact-checking posts reactions (M= 500, SD=68.85), Comments (M=180, SD=18.54), and shares (M=220, SD=26.78). In health-related posts, fake content average reactions were 600 with 72.25 SD, Comment (M= 260, SD=24.53), and shares (M=290, SD=27.34). On the hand 380 reactions, 140 comments, and 160 shares regarding health related fact-checking content. Religious fake content averaged 550 reactions, 300 comments, and 270 shares, while fact-checking posts received 420 reactions, 170 comments, and 180 shares. For entertainment issues, fake content averaged 530 reactions, 210 comments, and 280 shares, compared to 340 reactions, 110 comments, and 120 shares for fact-checking content. These findings suggest that fake content, particularly in political and health categories, achieves much higher engagement than fact-checking efforts (Table 8).

**Table 8: Engagement Metrics by Issue Category**

Issue Category	Content Type	Reactions Mean (SD)	Comments Mean (SD)	Shares Mean (SD)
Political	Fake Content	800 (85.56)	350 (31.45)	400 (35.75)
	Fact-Checking Content	500 (68.85)	180 (18.54)	220 (26.78)
Health	Fake Content	600 (72.25)	260 (24.53)	290 (27.34)
	Fact-Checking Content	380 (31.06)	140 (13.65)	160 (14.45)
Religious	Fake Content	550 (71.32)	300 (28.06)	270 (25.64)
	Fact-Checking Content	420 (60.29)	170 (16.61)	180 (18.31)
Entertainment	Fake Content	530 (68.74)	210 (19.37)	280 (25.36)
	Fact-Checking Content	340 (31.26)	110 (8.21)	120 (10.62)

**Discussion**

The findings of this study provide compelling insights into how social media users in Bangladesh navigate, engage with, and respond to fake content and fact-checking initiatives. Consistent with global patterns, the data shows that fake content enjoys higher visibility and user engagement

compared to fact-checking content, highlighting the challenge of mitigating misinformation in digital spaces.

A significant proportion of participants (58.67%) reported accidentally sharing fake content, and 54% had never fact-checked any information, despite 70% being aware of the existence of fake content. This reflects a knowledge-behavior gap similar to what prior studies have observed: awareness alone is insufficient to curb the spread of misinformation unless accompanied by critical digital literacy and behavioral incentives (McDougall et al., 2019; Lewandowsky et al., 2017).

The content analysis reveals that fake content—especially political and health-related posts—received substantially more reactions, comments, and shares than fact-checked posts. For instance, political fake content posts averaged 800 reactions compared to 500 for fact-checking, a pattern that aligns with studies showing emotional and controversial content often drives higher engagement (Vosoughi et al., 2018; Chuai & Zhao, 2022; Mosleh et al., 2024).

Regression analysis shows that awareness significantly predicts fact-checking behavior, while trust in social media negatively predicts it. This supports earlier research indicating that critical skepticism towards online platforms can enhance users' likelihood to verify information (Guess et al., 2020; Reiner et al., 2023). Moreover, the finding that those with higher education levels are more likely to fact-check echoes studies by Bachmann & Valenzuela (2023), who found that cognitive sophistication and education correlate with better misinformation detection.

The role of Facebook groups as the most-used fact-checking avenue (44%) is particularly interesting. While centralized fact-checking bodies like PolitiFact or Snopes are impactful globally (Graves, 2018; Moreno-Gil et al., 2022), in Bangladesh, peer-driven community fact-checking seems to play a more prominent role. This mirrors findings by Pal & Loke (2019), who argue that local networks and community knowledge often substitute for formal mechanisms in less-regulated digital environments.

However, only 8.67% of users had received any formal media literacy training, underscoring the pressing need for educational interventions. The strong support (88.33%) for including media literacy in school curricula aligns with calls from scholars such as Huang et al. (2024) and Lemish (2022) to institutionalize digital literacy as a countermeasure against misinformation.

The study also finds that while many users support stricter regulation of fake content (89%), their engagement behaviors (e.g., liking or sharing without verifying) contradict these attitudes. This attitudinal-behavioral inconsistency may be attributed to cognitive biases like the illusory truth effect or motivated reasoning, where repeated exposure to misinformation or ideologically congruent content increases perceived accuracy (Pohl, 2022; Ziemer & Rothmund, 2022).

In terms of effective countermeasures, the research supports findings that pre-bunking, visual corrections, and warning labels are more effective than traditional text-based corrections (Martel & Rand, 2023b; Vraga & Bode, 2020). Furthermore, Burel et al. (2020) argue that co-spreading

fact-checks alongside misinformation may help limit its reach-an approach that may be valuable in the Bangladeshi context where engagement with fake content dominates.

Overall, the study reinforces the multifaceted nature of combating misinformation. Users are simultaneously aware, skeptical, yet inadvertently complicit in the spread of fake content. Addressing this contradiction requires an integrated strategy that includes psychological interventions (e.g., inoculation theory), platform design changes, improved trust in information sources, and wide-reaching education policies.

### **Limitation of the Study**

This study has some limitations, the sample are specific, they are active social media users aged between 18 and above. Respondents are selected northern parts of Bangladesh, so the findings of the research should not be generalized to nationwide all users of social media, inactive and offline populations. Researchers use non-probability convenience sampling and the focus was regional, the results are most appropriately interpreted as indicative rather than representative. Future studies using probability-based or nationally representative samples are recommended to enhance generalizability.

### **Conclusion**

The findings of this study highlight the persistent and pervasive challenge that fake content poses within the social media landscape. Despite the proliferation of fact-checking initiatives and increased awareness among users, fake content continues to achieve higher engagement than verified information, driven by emotional appeal, cognitive biases, and algorithmic amplification. User behavior demonstrates a paradox where awareness does not always translate into corrective action, and trust in social media remains low, further complicating efforts to curb misinformation. Fact-checking interventions show promise, particularly when they are timely, visually engaging, and supported by media literacy initiatives, but their overall impact is constrained by psychological resistance and the rapid viral nature of falsehoods. To effectively counter fake content, a multifaceted approach is necessary-one that combines stronger regulatory frameworks, enhancement of user digital literacy, the adoption of proactive strategies such as pre-bunking, and the integration of more effective, contextually nuanced fact-checking methods. Future research should continue exploring these strategies and develop innovative tools to empower users to critically engage with information in an increasingly complex digital environment.

### **Conflict of Interest**

Researchers declare that they have no conflict of interest.

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