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Media Literacy and Susceptibility to Fake News: an Analysis of Facebook Users in Jawzjan Province, Afghanistan

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Abstract

This study investigates the determinants of fake news susceptibility and media literacy among Facebook users in Jawzjan Province, Afghanistan, and employs a quantitative approach to analyze the results from the distribution and collection of 384 questionnaires. Utilizing relevant criteria, analyzed through SPSS software, and appropriate statistical tests. The research examines how demographic, psychological, and experiential factors shape users' ability to detect fake news. According to the Results, Significant associations were found between detection skills and variables such as age, gender, education, occupation, and prior experience, while marital status showed no effect. Although most users demonstrate self-control with emotional content, lower media literacy persists among younger, less-educated, and self-employed groups. Notably, the filter bubble hypothesis was not supported by the data. The findings emphasize the need for targeted, context-sensitive educational interventions, especially online content and workshops, to strengthen critical thinking and digital resilience. The study recommends further community-driven research and practical programs to reduce vulnerability to misinformation in Afghanistan's evolving digital landscape.

Keywords: Fake News, Facebook Users, Jawzjan Province, Media Literacy

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سواد رسانه‌ای و آسیب‌پذیری در برابر اخبار جعلی: تحلیل تجربیات کاربران فیس‌بوک ولایت جوزجان، افغانستان در مواجهه با اخبار جعلی

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چکیده

این تحقیق به بررسی عوامل مؤثر بر آسیب‌پذیری در برابر اخبار جعلی و سطح سواد رسانه‌ای کاربران فیسبوک در ولایت جوزجان، افغانستان می‌پردازد. تحقیق حاضر، با استفاده از یک نظرسنجی و با رویکرد کمی تأثیر عوامل جمعیت‌شناختی، روانشناختی و تجربی بر توانایی تشخیص اخبار جعلی را ارزیابی می‌کند. جامعه آماری این تحقیق بالاتر از ۱۰ هزار نفر است و با سطح اطمینان ۹۵ درصد و خطای ۵ درصد، ۳۸۴ نفر را به عنوان نمونه آماری مورد مطالعه قرار می دهد. نتایج نشان می‌دهند سن، جنسیت، تحصیلات و شغل با توانایی تشخیص اخبار جعلی رابطه معناداری دارند، اما وضعیت تاهل براین فرایند بی‌تأثیر است. اکثریت شرکت‌کنندگان در مواجهه با محتوای احساسی خویشتن‌داری نشان می‌دهند و احساساتی برخورد نمی کنند. با این حال، سطح سواد رسانه‌ای در میان جوانان، افرادی که تحصیلات اندکی دارند و افراد دارای اشتغال آزاد پایین‌تر است. همچنین، یافته‌ها بر اهمیت مداخلات آموزشی هدفمند و متناسب با بافت فرهنگی و اجتماعی برای تقویت تفکر انتقادی و افزایش تاب‌آوری دیجیتال تأکید دارند. پیشنهاد می‌شود برنامه‌های آموزشی و کارگاه‌هایی به منظور بهبود سواد رسانه‌ای و توانایی تشخیص اخبار جعلی در میان کاربران رسانه‌های اجتماعی در افغانستان طراحی و اجرا شوند.

کلمات کلیدی: *اخبار جعلی، سواد رسانه‌ای، کاربران فیس‌بوک، ولایت جوزجان.*

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Problem Statement

With the rapid growth of social networks, especially Facebook, the patterns of news consumption and social interaction in Afghanistan have undergone significant changes. Facebook has not only enabled the swift exchange of information but also provided a powerful platform for shaping the identities, attitudes, and decisions of users, particularly youth in small and medium-sized cities such as Jawzjan (Mihailidis & Viotty, 2017, pp. 441-454; Rashidian, Batmanglich, & Rezvani, 2017, p. 231).

However, these new opportunities have come with substantial risks, most notably the widespread dissemination of fake news. Such news is designed to deceive, incite, or manipulate public opinion and can result in profound consequences, including the erosion of social trust, increased polarization, disruption of mental health, and even threats to national security (Allcott & Gentzkow, 2017, pp. 211-236; Larson, 2018). In the Afghan context, relatively low media literacy, the poor quality of formal education, the domination of personalized algorithms on social networks, and the emergence of the 'filter bubble' phenomenon have collectively exposed users to a restricted range of information and viewpoints, challenging their ability to distinguish fact from falsehood (Pariser, 2011, pp. 73-76).

Limited indigenous studies demonstrate that insufficient understanding of media literacy principles and a lack of experience with unreliable news sources have increased both the acceptance and the spread of fake news among Afghan users. Additionally, demographic factors (such as age, gender, and education) and psychological or emotional traits (including cognitive biases and emotional reactivity) may further weaken or strengthen users' accuracy in detecting fake news (Martel, Pennycook, & Rand, 2020, pp. 39-50). In this context, the absence of empirical evidence and in-depth research has restricted the development of effective educational strategies and policymaking. Given these gaps, this study seeks, through an empirical and context-sensitive approach, to identify the dimensions and determinants of fake news detection ability among Facebook users in Jawzjan, thereby providing groundwork for devising effective media literacy interventions and enhancing social resilience against misinformation.

The expansion of Facebook and social networks in Afghanistan has created new opportunities for communication and information dissemination, but has also greatly increased societal vulnerability to fake news. Weak media literacy and unequal access to credible resources, especially among the youth, have made distinguishing truth from fabrication a major challenge. The lack of comprehensive empirical research on the determinants of this capacity has constrained effective policy responses to fake news. The results of this research can inform the design of educational programs and the promotion of critical thinking, ultimately reducing harm and bolstering societal resilience.

The primary aim of this study is to identify the factors influencing the ability of Facebook users in Jawzjan to detect fake news. Accordingly, the secondary objectives are as follows: To examine the impact of media literacy and prior experience on fake

news detection skills among users. To analyze the role of content type (text, image, video) and demographic and psychological factors in the accuracy of fake news detection. To assess the effects of social network algorithms and filter bubble phenomena on limiting perspectives and the ability to distinguish true from fake news. To propose practical, educational strategies for enhancing media literacy and combating fake news at the local and national levels, based on the study's findings. Given the issues raised regarding the problem statement, importance, and objective of this work, the questions posed in this area are as follows: What factors influence the ability of Facebook users in Jawzjan province to discern fake news? To what extent do media literacy and previous encounters with fake news improve users' detection ability? What role do content type and format (text, image, video) play in the accuracy of users' fake news detection? How significant are demographic (age, gender, education) and psychological (emotions, cognitive biases) factors in users' ability to distinguish fake from real news? How do the filter bubble phenomenon and Facebook's algorithms affect users' exposure to diverse viewpoints and their accuracy in identifying fake news? Based on the research findings, what practical and educational interventions can be proposed to strengthen fake news detection skills and improve media literacy among Facebook users in Jawzjan?

Additionally, based on the research questions, the following hypotheses have been formulated: It seems that higher levels of media literacy among users improve their ability to detect fake news. It seems that users' previous experience with fake news is associated with greater accuracy in identifying such news. It seems that emotional and visual content, compared to textual content, reduces users' accuracy in detecting fake news. It seems that demographic (age, gender, education) and psychological (emotions, cognitive bias) characteristics significantly affect users' ability to differentiate fake from real news. It seems that the dominance of algorithms and the filter bubble phenomenon on Facebook restricts perspectives and decreases users' ability to detect fake news. It seems that implementing effective, needs-based educational and practical interventions can significantly enhance media literacy and fake news detection skills among Facebook users in Jawzjan Province.

Theoretical Literature

The proliferation of social media platforms, particularly Facebook, has fundamentally reshaped the landscape of news consumption and comprehension (Mihailidis & Viotty, 2017, pp. 441-454; Rashidian, Batmanglich, & Rezvani, 2017, p. 231). Within this dynamic environment, fake news has become increasingly pervasive, influential, and a significant threat to public trust (Allcott & Gentzkow, 2017, p. 211). Understanding the complex interplay of factors contributing to the detection and spread of misinformation necessitates an interdisciplinary theoretical framework, drawing primarily from media literacy theory, filter bubble theory, and psychological-demographic dimensions, complemented by relevant empirical studies.

Media literacy, as conceptualized by Potter (2019) and expanded upon by Buckingham (2015), encompasses a crucial set of competencies enabling individuals to critically analyze, verify, and comprehend the underlying meanings of media

content. This theoretical perspective posits that a higher degree of media literacy equips individuals with the necessary cognitive tools to discern manipulative or false information. Empirical studies consistently demonstrate an inverse relationship between media literacy levels and susceptibility to misinformation (Tandoc Jr, Lim, & Ling, 2018, pp. 137-153).

Pariser (2011) introduced the "filter bubble" concept, asserting that personalized algorithms on social media platforms create an individualized information ecosystem for each user, primarily by presenting content aligned with their existing interests and viewpoints. This algorithmic curation inadvertently limits exposure to diverse perspectives and dissenting information, thereby reinforcing existing beliefs and potentially leading to intellectual isolation. Research by Allcott & Gentzkow (2017) and Vosoughi & et al (2018) indicates that this phenomenon not only exacerbates political and social polarization but also heightens users' vulnerability to misinformation and confirmation bias. In transitional societies like Afghanistan, where media education infrastructure may be nascent and digital literacy varies, the pervasive influence of these algorithms poses an amplified risk (Flaxman, Goel, & Rao, 2016, p. 298). The filter bubble's effect on narrowing informational diets can significantly impede an individual's ability to cross-reference information and identify inaccuracies.

Communication psychology research provides substantial evidence that individual variables, including age, educational attainment, emotional states, and cognitive biases, play a significant role in either enhancing or hindering the ability to differentiate between authentic and fabricated news (Martel, Pennycook, & Rand, 2020, p. 41; Pennycook & Rand, 2019, p. 2521). For instance, young and less experienced individuals, as well as those prone to emotional reactivity, often exhibit increased vulnerability to misinformation (Mihailidis & Viotty, 2017, pp. 441-445). Cognitive biases, such as confirmation bias (the tendency to seek out and interpret information that confirms one's existing beliefs), are particularly influential in the acceptance and spread of fake news, irrespective of an individual's objective critical thinking skills. Understanding these psychological underpinnings is crucial for developing targeted interventions.

Global analyses of misinformation dissemination during critical events such as the 2016 US presidential election, the COVID-19 pandemic (Martel, Pennycook, & Rand, 2020, pp. 39-50), Brexit has consistently demonstrated that the rapid and widespread circulation of fake news can have severe political and societal repercussions (Allcott & Gentzkow, 2017, p. 214). Furthermore, recent regional studies (Flaxman, Goel, & Rao, 2016, p. 290), highlight a significant research gap concerning empirical investigations into the socio-digital landscape of Afghanistan. These studies emphasize the critical need for targeted media education to address the unique challenges of misinformation in transitional contexts, informing evidence-based policymaking and educational program design.

Methodology

This study employs a quantitative survey research design to systematically investigate the factors influencing Facebook users' ability to detect fake news in Jawzjan, Afghanistan. A structured methodological framework was developed based on the theoretical literature, similar to empirical works (Tandoc Jr, Lim, & Ling, 2018, p. 139; Pennycook & Rand, 2019, p. 2543), and the unique socio-cultural dynamics of the Afghan context.

A cross-sectional survey method was selected for its efficacy in capturing a broad range of attitudes, experiences, and demographic characteristics within a defined population at a single point in time. The research is explanatory and correlational, aiming to examine the relationships between variables such as media literacy, prior experience with fake news, content format, demographic and psychological factors, and users' fake news detection accuracy. The statistical population comprises active Facebook users residing in Jawzjan. To ensure the representativeness of responses, a stratified random sampling technique was used, considering key demographic variables (age, gender, and education level). The target sample size was determined using Cochran's formula (n=384), reflecting statistical recommendations for achieving a 95% confidence level and a 5% margin of error in social science research (Etikan, Musa, & Alkassim, 2016, pp. 1-4).

Data were collected using a self-administered questionnaire, developed through an extensive review of the relevant literature and validated tools (e.g., those employed by (Pennycook & Rand, 2019, p. 2524), The instrument consists of four sections: *Demographic Information,* such as age, gender, education, and Facebook usage patterns; Media Literacy Scale**,** adapted from Potter (2019) and Buckingham (2015), assessing respondents' abilities in critical analysis, source verification, and awareness of media manipulation. Fake News Detection Tasks, Scenario-based items presenting textual, visual, and emotional (video/image) news samples, drawn partly from real online examples and partly constructed based on standard misinformation typologies. Psychological Dimensions, short scales on emotional reactivity and cognitive bias (confirmation bias), using items from established psychology literature (Pennycook & Rand, 2019, p. 2523). The questionnaire was pre-tested with 30 respondents from the target community to assess clarity and reliability. Cronbach's alpha coefficients for the main scales were above 0.75, indicating acceptable internal consistency. Surveys were distributed online via Facebook groups and pages popular within Jawzjan and, where appropriate, in-person in selected community centers to include digitally less active users. Participation was voluntary, and respondents were assured of confidentiality and anonymity in accordance with ethical research guidelines (APA, 2020).

The research protocol received approval from the research ethics committee at the University of Jawzjan. All participants provided informed consent. Data were anonymized and securely stored, accessible only to the research team. Despite efforts to collect reliable and representative data from active Facebook users in Jawzjan province, this study faces several methodological limitations. First, the collected data are based on self-reports, which may be influenced by memory biases, honesty of responses, or the tendency to provide socially desirable answers. Moreover, there

were limitations in accessing objective data regarding users' actual behaviors or the content they were exposed to; therefore, only subjective evaluations could be used. This may reduce the accuracy of estimates related to media literacy and fake news detection ability.

Furthermore, the use of a cross-sectional survey design prevents the observation of temporal changes or the effects of ongoing educational interventions. Consequently, it is recommended that future research should incorporate real behavioral data, digital trace analysis, or mixed-methods approaches to gain deeper and more accurate insights into users' experiences.

Findings

This section presents the results of the survey data analysis in both descriptive and inferential terms. The findings address the research questions and hypotheses, reporting on key demographic, psychological, and media literacy variables among the participants.

Table 1. Respondents' Age

No.	*Variable*	*N*	*Minimum*	*Maximum*	*Mean*	*Std. Deviation*
1	Age	384	20	36	25.01	2.90

The majority of respondents in this study were young adults, with an average age of 25.01 years (SD = 2.90, age range: 20–36 years). This age composition reflects the dominance of younger, more active groups who tend to engage most with social media platforms. Pearson correlation analysis revealed a significant relationship between age and the ability to identify fake news, indicating that as age increases, users' ability to detect fake news also tends to rise.

Table 2. Respondents' Gender

No.	Gender	Frequency	Percentage
1	Male	268	69.8%
2	Female	116	30.2%
3	Total	384	100%

The majority of participants were male (69.8%), while females comprised 30.2% of the sample. This gender distribution is notable for its reflection of Facebook user demographics within the studied community. An independent t-test showed that males had a significantly higher mean ability to identify fake news compared to females, suggesting a significant gender-based difference in media literacy or sensitivity to fake news on Facebook.

Table 3. Respondents' Marital Status

No.	Marital Status	Frequency	Percentage
1	Single	139	36.2%
2	Married	245	63.8%
3	Total	384	100%

More than sixty percent of respondents were married (63.8%), a proportion that may influence their behavior and attitudes toward social media platforms. However, an independent t-test found no statistically significant difference in the ability to identify fake news between married and single participants. Therefore, marital status does not appear to exert a significant impact on this skill.

Table 4. Respondents' Occupation

No.	Occupation	Frequency	Percentage
1	Self-employed	124	32.3%
2	Student	22	5.7%
3	Teacher	51	13.3%
4	Medical Doctor	32	8.3%
5	Shopkeeper	52	13.5%
6	Government Employee	27	7.0%
7	Nurse	76	19.1%
8	Total	384	100%

Respondents in this study represented a diverse range of occupations, with the highest frequencies observed among self-employed individuals (32.3%) and nurses (19.1%). A one-way analysis of variance (ANOVA) indicated a statistically significant difference in the ability to identify fake news across occupational groups. Post-hoc analysis revealed that teachers and nurses had the highest mean scores, while self-employed respondents exhibited the lowest. Such differences may stem from disparities in education, exposure to reliable information sources, and relevant daily experiences.

Table 5. Respondents' Educational Level

No.	Educational Level	Frequency	Percentage
1	High School Graduate (12th Grade)	165	43.0%
2	Bachelor's Degree	207	53.9%
3	Master's Degree	12	3.1%
4	Total	384	100%

The majority of respondents held university degrees: 53.9% held a bachelor's, 43.0% had completed high school, and a small minority (3.1%) held a master's degree. According to the results of one-way ANOVA, there was a statistically significant difference in the ability to identify fake news among the three educational. Post-hoc analyses indicated that respondents with a master's degree scored significantly higher than other groups, highlighting the crucial role of higher education in enhancing media literacy and the capacity to discern fake news.

Table 6. Emotional Reaction to Enraging News

No.	Response	Frequency	Percentage
1	Agree	4	1.0%
2	Disagree	8	2.1%
3	Completely Disagree	372	96.9%
4	Total	384	100%

Findings indicate that an overwhelming majority of users (96.9%) disavowed impulsive sharing of enraging news, with only 3.1% expressing even a minor inclination to share emotionally charged reports rapidly. This pattern suggests a prevailing trend of measured and self-regulated social media behavior among Facebook users in Jawzjan. A chi-square test was conducted to examine the association between emotional response and gender, revealing no statistically significant relationship. This indicates that, regardless of gender, most users refrain from impulsive sharing of enraging news. Similarly, the chi-square test for the association between educational level and this emotional response was not significant, suggesting that emotional self-control in reaction to news is independent of educational attainment.

Table 7. The Impact of Negative News on Memory

N0.	**Response**	**Frequency**	**Percentage**
1	Agree	288	75.0%
2	Completely Agree	37	9.6%
3	Disagree	5	1.3%
4	Completely Disagree	54	14.1%
5	Total	384	100%

The majority of users, 84.6%, combining "agree" and "completely agree," acknowledged that negative news exerts a more significant and lasting impact on their memory. This outcome closely aligns with psychological evidence of the "negativity bias," wherein adverse information tends to have a more pronounced effect on human cognition. To examine differences by demographic characteristics, chi-square analysis was conducted. A significant difference was found between male and female

respondents in their agreement with this statement, with women more likely to report the heightened impact of negative news

Moreover, the chi-square analysis by educational level yielded significant results, particularly indicating that those holding a master's degree were more inclined to agree with the statement, underscoring the role of higher education in the perception and processing of negative information.

Table 8. Trust Derived from Positive Feelings Towards the News Source

No.	Response	Frequency	Percentage
1	Agree	209	54.4%
2	Completely Agree	45	11.7%
3	Disagree	1	0.3%
4	Completely Disagree	129	33.6%
6	Total	384	100%

The data indicate that over half of users (66.1%, combining "agree" and "completely agree") reported that positive emotions towards a news source enhance their trust in it. This finding highlights the decisive role of positive affect in the perception of trustworthiness and credibility of news sources within social networks. Conversely, 33.9% of respondents rejected this association, reflecting the presence of a critical and evaluative attitude among a subset of participants.

The results of the chi-square test revealed no statistically significant relationship between gender and this variable, suggesting that the effect of positive emotions on trust in the news source is generally similar regardless of gender. In contrast, the chi-square analysis for educational level revealed a significant association, with higher-educated individuals showing a slightly more critical approach and being less likely to base trust solely on positive affect.

Chi-square tests revealed that users' emotional reactions to enraging news are largely independent of gender or educational level; most users demonstrate self-control under emotional stimuli. In contrast, the impact of negative news on memory showed significant differences by gender and education, with women and those with higher education more likely to acknowledge a stronger effect. For trust influenced by positive feelings towards the news source, gender was not a significant factor; however, individuals with higher education exhibited a more critical perspective and were less susceptible to affect-based trust. All statistical results were reported at the 0.05 significance level.

Table 9. Content Type Frequency and Percentage

No.	Content Type	Frequency	Percentage
1	Text	157	40.97%
2	Image	115	29.95%

3	Video	112	29.8%
4	Total	384	100%

The content type table 9 shows that text-based content makes up the largest proportion of cases (157 instances, about 41%), while image (115 cases) and video content (112 cases) each account for roughly 30%. Although text holds the leading position, image and video content are also widely used and appear at similar rates, suggesting a noticeable but not overwhelming preference for text.

To assess whether these differences are statistically meaningful, a one-sample chi-square test was conducted. The test indicated that usage patterns across the three content types differ significantly from what would be expected by chance. This demonstrates a clear preference among users for text content over images and videos, while multimedia content still represents a substantial and growing presence.

Table 10. Distribution of User Responses about Filter Bubbles and Algorithms on Facebook

No.	*Statement (Question)*	*Strongly Disagree*	*Disagree*	*Neutral*	*Agree*	*Strongly Agree*	*Mean*	*Standard Deviation*
1	Facebook content is primarily aligned with my interests.	50 (13.0%)	104 (27.1%)	10 (2.6%)	145 (37.8%)	75 (19.5%)	3.24	1.07
2	Facebook displays fewer diverse viewpoints.	39 (10.2%)	180 (46.9%)	4 (1.0%)	90 (23.4%)	71 (18.5%)	2.93	1.10
3	Algorithms reduce the diversity of news.	102 (26.6%)	139 (36.2%)	16 (4.2%)	73 (19.0%)	54 (14.1%)	2.57	1.23

Table 10 is dedicated to evaluating the influence of “filter bubbles” and the algorithms employed on the Facebook platform on user perception and experience within Jawzjan Province. Key findings derived from the assessment of three critical statements indicate that an overwhelming majority of users (57%) believe that the content presented by Facebook is predominantly repetitive and aligned with their interests, strongly suggesting the formation and reinforcement of the “filter bubble” phenomenon. However, regarding exposure to conflicting or diverse viewpoints, a majority of users (57%) dissented from this assertion, acknowledging that access to a relative diversity of perspectives remains feasible on the platform. Furthermore, a significant proportion of users (63%) have either not experienced a reduction in news diversity attributed to algorithmic functions or lack awareness regarding this issue.

Statistical analyses, encompassing t-tests, Analysis of Variance (ANOVA), and correlation tests, revealed no statistically significant differences in the mean scores

of the aforementioned statements across demographic variables such as age, gender, and educational attainment. Specifically, a correlation test between users' perceived filter bubble and their ability to discern fake news did not yield a statistically significant association. These results imply that despite the experience of content personalization and alignment by a segment of users, this phenomenon alone cannot serve as a robust predictive factor for a reduced range of perspectives or a weakening of critical skills in identifying misinformation.

In conclusion, it can be inferred that while Facebook's algorithms play a role in reinforcing "filter bubbles" and aligning content with user interests, their tangible impact on the overall user experience, particularly concerning the exclusion of dissenting views and the reduction of news diversity, has been less pronounced than anticipated. Statistically, these factors alone have not emerged as definitive indicators for assessing users' proficiency in identifying fake news. These findings underscore the complexity of user interactions with digital content in the contemporary era and highlight the multifaceted influences of social platform algorithms, thereby emphasizing the need for more in-depth research in this domain.

The Suggested Solutions to Enhance Fake News Detection: In response to Research Question 5, the most important solutions for enhancing media literacy and fake news detection among Facebook users in Jawzjan were identified through participant input. Producing online educational content was the top choice (32.6%), followed by encouraging reliance on credible sources (20.3%) and organizing media literacy workshops (18.5%). Practical training and local trainers also received support, while a few endorsed other options. These results highlight user preference for flexible, context-sensitive educational strategies, especially blended approaches combining online and in-person learning, underscoring the need for multi-modal, community-based interventions.

Table 11. Frequency and Percentage of Suggested Solutions to Enhance Fake News Detection and Media Literacy

No.	*Proposed Solution*	*Frequency*	*Percentage*
1	Organizing media literacy workshops	71	18.5%
2	Practical training for fake news identification	44	11.5%
3	Producing online educational content	125	32.6%
4	Using local trainers or teachers	60	15.6%
5	Encouraging reliance on credible news sources	78	20.3%
6	Other (please specify)	6	1.6%
	Total	384	100%

A one-sample chi-square test was used to examine whether the distribution of participants' preferences for suggested solutions differed significantly from a uniform distribution. The results revealed a highly significant difference, indicating that respondents strongly favored 'producing online educational content' as the most effective method for enhancing media literacy and fake news detection, followed by

'encouraging reliance on credible news sources' and 'organizing media literacy workshops'. Very few participants endorsed the 'other' category, underscoring the consistency in preferred approaches.

Results of Hypothesis Tests

Hypothesis 1: Higher levels of media literacy lead to improved fake news detection.

The findings demonstrate a significant positive relationship between users' media literacy levels and their ability to identify fake news. Participants with higher educational attainment, especially those holding graduate degrees, displayed notably greater accuracy in detecting fake content. This supports Hypothesis 1, underscoring the vital role of media literacy education in strengthening resilience against misinformation.

Hypothesis 2: Prior experience with fake news is associated with greater detection accuracy. The analysis indicates that users who have previously encountered and recognized fake news exhibit significantly higher accuracy in subsequent detection tasks. This suggests that experiential learning enhances users' critical skills and supports the development of effective strategies for identifying misinformation, thereby confirming Hypothesis 2.

Hypothesis 3: Emotional and visual content, compared to text-based content, reduces users' detection accuracy. The results show that users are more accurate in identifying misleading information when it is presented in textual form, whereas detection accuracy significantly decreases with emotionally charged or visual content (based on chi-square analysis). Thus, Hypothesis 3 is confirmed, highlighting how the persuasive nature of non-textual formats can undermine critical evaluation.

Hypothesis 4: Demographic (age, gender, education) and psychological (emotions, cognitive bias) factors significantly affect users' ability to discern fake from real news. The research reveals that variables such as age, gender, occupation, and educational level are all significantly associated with fake news detection abilities, as demonstrated through correlation, t-test, and ANOVA results. Psychological characteristics, including emotional reactivity and cognitive bias, also show significant effects. These results confirm Hypothesis 4 and illustrate the complex interplay between demographic and psychological factors in news evaluation.

Hypothesis 5: Based on the collected data, while more than half of the users confirmed that Facebook tends to display content aligned with their interests, the majority of participants did not experience a significant reduction in the diversity of viewpoints or any clear limitation in access to various news sources. Furthermore, the results of statistical tests showed no significant differences in the perception of the filter bubble effect among different demographic groups, nor any correlation between this perception and the ability to detect fake news. Therefore, the research hypothesis asserting the decisive role of algorithms and the filter bubble in reducing news diversity and users' detection skills was not confirmed.

Hypothesis 6: The hypothesis that Facebook users have clear preferences for specific solutions to enhance media literacy and fake news detection was strongly supported. Statistical analysis using a one-sample chi-square test indicated a highly significant difference in the distribution of participants' choices, rejecting the null hypothesis of uniform distribution. The majority of respondents favored "producing online educational content" (32.6%) as the most effective strategy, followed by "encouraging reliance on credible news sources" (20.3%) and "organizing media literacy workshops" (18.5%). This result confirms that structured, context-sensitive interventions are widely preferred for strengthening fake news detection skills among Facebook users in Jawzjan Province.

For Hypothesis Six, "Targeted educational interventions improve media literacy and detection skills," various factors prevented the initiation of field investigations necessary to empirically confirm or refute this hypothesis. Therefore, we only asked the participants about these factors.

Table 12. Alignment of Hypotheses and Empirical Results

Hypothesis	Result	Brief Explanation
1. Higher media literacy improves fake news detection.	Supported	A significant positive correlation; individuals with higher education demonstrate greater accuracy.
2. Prior experience with fake news increases detection accuracy.	Supported	Users with previous exposure to fake news performed better in identifying it.
3. Emotional/visual content reduces detection accuracy.	Supported	Emotionally charged or visually news, influenced by affective bias, decreases users' accuracy.
4. Demographic and psychological factors play a significant role.	Supported	Older age, being male, higher education, and certain occupations (teachers, nurses) are linked to higher accuracy.
5. Algorithms and filter bubbles do not significantly reduce detection accuracy.	Not Supported	No significant association was found between filter bubble perception and detection ability.
6. Targeted educational interventions improve media literacy and detection skills.	Limited empirical data; strong theoretical support	Theoretical evidence and user preferences indicate educational interventions are effective, but were not directly tested.

Discussion

The present study sought to analyze Facebook users' behaviors in Jawzjan Province, Afghanistan, focusing on media literacy, emotional responses, demographic variables, and the specific impacts of algorithms and filter bubbles. Several findings align with, and in some cases expand upon, established theoretical and empirical frameworks.

Firstly, the results demonstrate that the majority of users exhibit substantial self-control when encountering emotionally charged or anger-provoking news. This self-regulation reflects key tenets of media literacy theory, which emphasizes the

importance of critical analysis and affect regulation in digital environments (Potter, 2019; Buckingham, 2015). Consistent with previous research, higher levels of education corresponded with greater restraint in sharing unverifiable or misleading information, particularly when emotions run high (Friggeri, Adamic, Eckles, & Cheng, 2014, pp. 101-110).

A considerable number of respondents reported that negative news content has a more powerful and persistent impact on memory, underscoring the relevance of the "negativity bias" described by Rozin and Royzman (2001). Notably, this effect was more pronounced among women and those with higher educational attainment, which confirms previous findings that both gender and education can shape individuals' interpretation, processing, and recall of negative news (Rozin & Royzman, 2001, pp. 296-320).

Furthermore, individuals with more advanced education tended to adopt a more cautious and critical stance toward trust in news sources, relying less on positive affective responses. This skepticism aligns with the principles of the filter bubble hypothesis (Pariser, 2011), as well as research by Wardle and Derakhshan (2017) on digital media literacy. Well-educated users demonstrated greater analytical capacity and selective exposure, making them less likely to base their trust solely on emotional resonance.

Significant differences in fake news detection by demographic factors (age, gender, education, occupation) were observed, echoing psychosocial models of media behavior. As in earlier studies, older users, men, teachers, and those holding a master's degree performed better in identifying fake news, highlighting the central role of both experience and academic training (Martel, Pennycook, & Rand, 2020, pp. 39-50).

Regarding the impact of social media algorithms and the filter bubble phenomenon, the findings offer a nuanced view. While over half of the users recognized repetitive and interest-aligned content, indicating a degree of awareness regarding algorithmic curation, most did not perceive a substantive restriction on exposure to diverse or dissenting viewpoints. Moreover, the majority either disagreed with or could not clearly identify a reduction in news diversity attributable to algorithms.

These outcomes suggest that, although content personalization exists, it does not definitively create the informational isolation hypothesized by Pariser (2011) or lead to the extreme narrowing of perspectives suggested by some international literature (Allcott & Gentzkow, 2017,p 211-236; Vosoughi et al., 2018,p 1146-1151). This study's statistical analyses (t-tests, ANOVA, and correlation) revealed no significant association between users' perceptions of being within a filter bubble and their ability to detect fake news. Thus, Hypothesis 5, predicting that algorithmic dominance and filter bubbles would restrict perspectives and reduce fake news detection, was not supported.

Overall, the findings highlight the predominant influence of educational, demographic, and psychological factors over algorithmic ones in shaping users' susceptibility to misinformation. This underscores the necessity for robust, context-sensitive media literacy interventions, especially in transitional societies like Afghanistan, where digital divides and variable access to quality education persist. The strong endorsement by participants for online education, workshops, and reliance on credible sources reinforces the importance of multifaceted, accessible, and participatory solutions for building societal resilience (Martel, Pennycook, & Rand, 2020, pp. 39-50; Tandoc Jr, Lim, & Ling, 2018, pp. 137-153)

In summary, although algorithmic content curation and filter bubbles are part of the user experience, their influence on fake news susceptibility is considerably less significant than individual-level and contextual factors. Effective interventions should thus prioritize expanding media literacy, critical thinking skills, and emotional regulation across diverse communities.

Conclusion

This study provides a nuanced and evidence-based contribution to the understanding of fake news susceptibility and media literacy among Facebook users in Jawzjan Province, Afghanistan. By integrating psychological, emotional, and demographic variables, the research offers a comprehensive picture of how Afghan users navigate the complex digital news ecosystem.

The findings reveal that, despite the majority of users exercising discernment and self-control when confronted with emotionally charged or negative news, substantial gaps in media literacy and the capacity for critical evaluation remain. These deficiencies are especially pronounced among younger, less-educated, and self-employed individuals, groups identified as particularly vulnerable to misinformation. The persistence of negativity bias, along with the differentiated impacts of educational attainment, gender, and occupation, underscores the intricate ways in which social and psychological factors mediate digital news behaviors.

Taken together, these results underscore the critical need for robust, contextually tailored media literacy initiatives within Afghanistan. Efforts to cultivate critical thinking skills and emotional self-regulation will be vital for enhancing individual and collective resilience to misinformation and digital manipulation.

For lasting impact, future research should employ longitudinal and mixed-method approaches, allowing for deeper exploration across diverse geographical and demographic segments. Such strategies will enable the development of more targeted interventions and inform policies that more effectively combat the challenges of fake news and information disorder in Afghanistan and similar socio-digital contexts.

Limitations

Despite offering valuable insights into media literacy and fake news susceptibility among Facebook users in Jawzjan Province, Afghanistan, this study is subject to several important limitations that should be acknowledged when interpreting and generalizing the findings:

The research employed a cross-sectional survey design relying on self-reported data. Such an approach only captures user attitudes and behaviors at a single point in time and is susceptible to common limitations of self-report methods, including recall bias and a tendency toward socially desirable responses. Users may not always accurately report their motivations or vulnerabilities regarding fake news. The sample was drawn exclusively from active Facebook users in an urban area (Jawzjan city). This restricts the external validity of the study, as the findings may not be fully generalizable to other Afghan provinces, rural communities, or populations with less digital access and different socio-cultural backgrounds.

While the study included key demographic, educational, and psychological variables, it did not account for other potentially impactful factors such as political orientation, diversity of media exposure, or socio-economic status. The omission of these variables may limit the comprehensiveness of the explanatory model for fake news susceptibility. Although the study specifically evaluated the effects of algorithms and the filter bubble phenomenon, this assessment was strictly based on user perceptions and self-reported experiences. The lack of direct platform data or objective measures of users' actual informational environments may obscure deeper or less obvious impacts of algorithmic content curation. Thus, subtle or long-term filter bubble effects might have gone undetected.

Given the quantitative survey approach, the research was unable to explore the personal narratives, lived experiences, or nuanced motivations behind users' interactions with fake news. Qualitative methods, such as in-depth interviews or focus groups, could reveal richer details about cognitive, emotional, and cultural processes influencing news judgments. Afghanistan's unique socio-political environment, issues around media freedom, security concerns, and respondents' apprehensions about voicing their genuine opinions online may have influenced both participation and candor in survey responses. These local realities should be taken into account when applying the study's conclusions.

In summary, although the present study advances empirical understanding of digital news engagement and misinformation in Afghanistan, future research would benefit from more diverse sampling, the inclusion of additional contextual variables, and the use of mixed or qualitative methods to provide a more holistic and nuanced picture.

Recommendations

Building on the findings and mindful of the study's limitations, several practical and research-driven recommendations are proposed to strengthen fake news resilience and media literacy among Afghan Facebook users: Educational authorities, civil society, and media organizations should develop and implement comprehensive media literacy programs within both formal (schools, universities) and informal (community centers, online platforms) educational systems. Tailoring curricula to address the needs of younger, less-educated, and self-employed users who were found to be especially vulnerable can help bridge the media literacy gap and foster critical digital skills.

The high participant interest in online educational content and mixed-mode learning suggests that scalable, digital solutions, such as webinars, interactive e-learning modules, and short workshops, are particularly effective. Combining these with in-person sessions led by trusted local trainers can maximize engagement and effectiveness, even in areas with limited digital infrastructure.

Efforts should be made to identify, promote, and maintain access to trustworthy and verified news sources, especially through partnerships between media outlets, fact-checking organizations, and social platforms. Awareness campaigns and educational materials should encourage users to verify sources before sharing information.

Given that prior experience with fake news was shown to improve detection skills, experiential learning such as simulations, gamified quizzes, and community-led peer education should be integrated into interventions. Empowering users to share their personal stories and detection strategies fosters a more supportive and informed social media environment.

Although filter bubbles and algorithmic curation did not significantly diminish users' ability to detect fake news in this study, ongoing monitoring is recommended as social media technologies and user behaviors evolve. Collaboration with platform providers and the use of independent audits or research partnerships may help better capture the real-world impact of algorithms on informational diversity and news exposure.

Future studies should expand sample diversity, including more rural, less-connected, and demographically varied regions, to enhance representativeness. Mixed-method or qualitative approaches (e.g., focus groups, interviews) are advised to complement survey data and provide deeper insights into user attitudes and nuanced experiences.

Interventions and research should be sensitive to Afghanistan's unique socio-political realities, ensuring respect for cultural norms, linguistic preferences, and security concerns. Engaging local communities and stakeholders in the co-design and delivery of educational programs will enhance their relevance, uptake, and impact.

In summary, a multifaceted, flexible, and context-specific strategy is essential for building digital resilience and empowering Afghan users to navigate misinformation. Collaboration across educational, governmental, media, and community sectors will be key to the sustainability and effectiveness of these efforts.

Declaration

The authors declare that this manuscript is their original work and has not been submitted or published elsewhere. All sources and references have been appropriately acknowledged.

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