

Draft Research Report
(Not for public distribution)

Perceptions and Impact of Disinformation on Pakistani Youth

**How university students understand
online disinformation**

Prepared By

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About the Coalition Against Disinformation

The Coalition Against Disinformation (CAD) was formed in March 2023 to bring together digital media, academia, and civil society stakeholders to push back against disinformation through media literacy initiatives. The coalition works to raise awareness, promote partnerships, and undertake collaborative actions to counter disinformation by producing research, organizing training sessions, and conducting advocacy. CAD is supported and facilitated by Freedom Network. CAD founding members include journalism, mass communication or media departments of the following universities (in alphabetical order):

- Balochistan University of Information Technology, Engineering and Management Sciences (BUITEMS)
- Centre for Excellence in Journalism (CEJ) at IBA-Karachi
- Fatima Jinnah Women University
- Rawalpindi Women University
- International Islamic University Islamabad (IIUI)
- National University of Sciences & Technology (NUST)
- Riphah International University, Islamabad
- SZABIST Islamabad
- University of Karachi
- University of Peshawar

The founding coalition members also include representatives of the following organisations:

- Freedom Network (Convener)
- Institute for Research, Advocacy and Development (IRADA)
- Alliance for Diversity & Pluralism in Media
- Digital Media Alliance of Pakistan (DigiMAP)
- Pakistan Federal Union of Journalists (PFUJ)
- Women Journalists Association of Pakistan (WJA)

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Acknowledgements

The Coalition Against Disinformation would like to thank the study's lead researcher Dr. Adnan Butt, a Karachi-based educator and trainer who holds a PhD in green marketing, and the study's editor Waqas Naeem, a media analyst and disinformation researcher. The coalition would also like to thank the distinguished members of the research oversight committee for their advice and support:

- Dr. Faizullah Jan, HoD, the Department of Journalism and Mass Communication, University of Peshawar;
- Dr. Asmat Ara, HoD, the Department of Mass Communication, University of Karachi;
- Dr. Muhammad Ali, HoD, the Department of Communication & Media Studies, Fatima Jinnah Women University;
- Mr. Adnan Rehmat, media development expert and IMS Pakistan country programme manager;
- Mr. Iqbal Khattak, Executive Director of Freedom Network

Finally and importantly, the coalition thanks the research team of mass communication students who assisted the lead researcher by collecting the survey data from university campuses:

- Muhammad Haris, BUIITEMS
- Zannirah Saleem, BUIITEMS
- Mahnoor Asif, CEJ-IBA
- Nazish Abro, CEJ-IBA
- Ayesha Mir, Fatima Jinnah Women University
- Zainab Rehan, Fatima Jinnah Women University
- Samina Bibi, IIUI
- Qazi Ibad, IIUI
- Ayesha Siddique, NUST
- Fiza Javed, Rawalpindi Women University
- Bushra ul Ain, Rawalpindi Women University
- Shanza Ehsan, Riphah University
- Saman Khalid, Riphah University
- Muhammad Rizwan, SZABIST Islamabad
- Faisal Shahzad, SZABIST Islamabad
- Hina Yousaf, University of Karachi
- Azhar Ahmed, University of Karachi
- Saba Shah, University of Peshawar
- Nabeel Ali Khan, University of Peshawar

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Executive Summary

Online disinformation has affected almost all aspects of civic and political life in Pakistan during the past few years. However, policy discourse and practical interventions on countering disinformation by government and civil society have largely ignored or struggled to address the potential impact of online disinformation on young Pakistanis, even though people between the ages of 15 and 29 years alone make up almost 27% of the country's population.

The Coalition Against Disinformation (CAD) – a voluntary collective of digital media news outlets, academia, and civil society organizations established in 2023 as a joint national forum for knowledge production, discussions, and actions to counter disinformation – set out to remedy this under-representation of youth in efforts to address online disinformation by conducting a collaborative baseline research study.

This research study, produced as a result of the collective efforts of student researchers at the mass communication and media departments of 10 Pakistani universities, attempts to explore and examine the presumably different ways in which young Pakistani university students view and understand online disinformation.

The study is based on a quantitative survey of 1,043 students. The survey questionnaire asked the respondents about their perceptions about disinformation, their beliefs about the potential impact of false messages, their levels of trust in different information sources, and their awareness of fact-checking practices, among other questions.

Some of the findings of the research are:

- Most young people (63%) think they come across disinformation on the Internet every day.
- Majority of the respondents (81%) feel social media websites contribute primarily to the spread of disinformation and most people (70%) perceive Facebook to be most prone to online disinformation.
- The students believe disinformation poses a threat to democracy and elections (62%)
- Most respondents think online disinformation could lead to the spread of false beliefs (78%) and they are concerned about its impact on society (64%).

- Young people are more likely to click, read or share information that they trust (61 to 65%). But the frequency of their levels of trust varies across sources, with nearly half the respondents claiming they trust traditional news organizations (47%) and government websites (48%) either often or very often.
- Nearly seven out of every 10 respondents consider fact-checking an “effective” way of countering disinformation. However, less than four in every 10 students claim to actually fact-check the information they get from the Internet.

Through statistical testing, the research analysis also proved that the perception of disinformation of young people has a significant impact on their level of trust in information sources, and that the level of awareness of young people about fact checking has a significant impact on their own fact checking practices.

Based on the findings, the study offers practical and policy recommendations, including to:

- Introduce comprehensive media literacy programs in universities, preferably through journalism and mass communications departments, and integrate fact-checking mechanisms and media literacy modules into the academic curriculum.
- Encourage the information stakeholders to establish collaborations with social media platforms or their local representatives to formulate and execute strategies to curb the flow of disinformation, especially with a view to educate and protect youth.
- Initiate a national media literacy campaign in support with government bodies, NGOs, media development groups and educational institutions to educate target groups about critical online use and effective strategies to counter disinformation.
- Allocate resources for the establishment and promotion of fact-checking initiatives at the national level, and support organizations dedicated to fact-checking.
- Establish institutionalized reporting mechanisms for disinformation and encourage collaborative reporting of potential instances of false information so it can be debunked.

We hope that the findings and recommendations of this study will be useful to policymakers, civil society groups, media development organizations and academics working on disinformation in Pakistan.

1. Introduction

In an age dominated by information, the digital landscape has become both the canvas and the battleground for the dissemination of knowledge. The advent of the internet not only empowered societies with unprecedented access to information but also connected individuals across the globe in ways unimaginable just a few decades ago. However, the escalation of the digital revolution has given rise to a darker phenomenon – the covert proliferation of disinformation. As we stand on the verge of an era defined by the rapid development of generative Artificial Intelligence technologies, it is crucial to investigate the impact of disinformation on one of the most impressionable segments of our population –the youth, especially university students.

The academic journey, once a custodian for the pursuit of truth and knowledge, now finds itself in the midst of whirlpool of different narratives. The digital age has blurred the lines between fact and fiction, and the consequences of this distortion are far-reaching. This research by the Coalition Against Disinformation (CAD), an alliance of digital media, academia and civil society organizations in Pakistan, seeks to unravel the intricate web of disinformation and its multifaceted influence on the minds of university students, which may have a long lasting impact on their perception and behavior.

1.1 The Disinformation Phenomenon

Disinformation, often enveloped in the guise of misinformation, false news, or fake narratives, has emerged as a potent force in shaping public opinion. No longer confined to the peripheries of political discourse, disinformation pervades every facet of our lives, from social interactions to academic pursuits. The rapid proliferation of misleading content on various digital platforms has transformed the information landscape into an untrustworthy ground, challenging the very foundations of critical thinking

1.2 Disinformation Impact on University Sphere

In this digital era universities, traditionally bastions of intellectual rigor, are also not immune to the pervasive impact of disinformation. As knowledge seekers navigate the vast expanse of information available online, they are more likely to be confronted with a deluge of narratives. Some of these narratives are honest and dependable, but many of them are intentionally misleading. The susceptibility of university students to disinformation is heightened by their

inherent curiosity, openness to new ideas, and a formative stage of intellectual development. This highlights the critical need to examine the potential repercussions of online disinformation on university students. Given that they represent the upcoming generation of opinion leaders, understanding how deceptive information influences their perspectives is essential for fostering a discerning and informed future leadership.

1.3 Objective of the Study

The objective of this research is to dissect the way university students perceive and understand the phenomenon of online disinformation, examining how they view the impact of distorted narratives on their own information consumption, their worldview and the society they live in. This study seeks to offer insights into the predominant platforms utilized by Pakistani youth for online information consumption. Additionally, it aims to understand their perceptions of disinformation and explore the counterstrategies they employ to navigate and counteract disinformation. This study strives to offer insights that can guide the development of strategies aimed at cultivating media literacy, critical thinking skills, and resilience against the harmful impacts of disinformation.

1.4 Structure of the Report

This report is structured to provide a comprehensive understanding of the disinformation landscape affecting university students. In the following chapters, we will explore the historical context of disinformation, provide an overview of the research methodology, conduct a detailed analysis of the data, perform hypothesis testing, and present recommendations for mitigating the effects of disinformation.

2. Literature Review

In order to comprehend the impact of disinformation on university students and the youth, it is imperative to contextualize this phenomenon within the existing body of literature. The literature review aims to furnish a comprehensive overview of essential concepts, theoretical frameworks, and empirical studies that shed light on the intricate relationship between disinformation and its impact on Pakistani youth.

2.1 Disinformation

The term "disinformation" encapsulates a spectrum of deceptive practices aimed at manipulating perceptions and spreading false or misleading information, usually to achieve some specific agenda. It involves the intentional creation and dissemination of deceptive content, often presented as factual or trustworthy information. Disinformation can take various forms, including fabricated news stories, misleading images, and manipulated videos. Its impact extends beyond misinformation, as it is strategically crafted to influence public opinion, propagate disagreement, or advance political, social, or economic objectives (Wardle & Derakhshan, 2017).

2.2 The Filter Bubble Theory - Theoretical Framework

Several theoretical frameworks have been proposed to analyze the dissemination and reception of disinformation. Eli Pariser (2011) proposed a theory "The Filter Bubble" positing that individuals are increasingly confined to personalized information echo chambers, reinforcing pre-existing beliefs and limiting exposure to diverse perspectives. The filter bubble significantly influences how individuals consume information by reinforcing their existing beliefs and restricting exposure to divergent opinions. The absence of a variety of viewpoints, coupled with the creation of digital echo chambers where users interact predominantly with like-minded individuals, establishes an environment conducive to the circulation and credibility of disinformation. In such confined digital spaces, disinformation can proliferate without facing robust challenges or effective fact-checking mechanisms. The implications of the filter bubble underscore the importance of actively seeking diverse perspectives, promoting information literacy, and implementing measures to mitigate the impact of disinformation in online environments.

2.3 Online Platforms and Disinformation

In today's interconnected world, the use of online platforms for information has become integral to our daily lives. Users can quickly find a lot of information on almost any topic by using search engines like Google. Social media platforms such as Facebook and Twitter serve not only as means of social connection but also as sources for real-time news updates and discussions. Educational platforms like Coursera and Khan Academy facilitate self-paced learning. Moreover, video-sharing platforms like YouTube have emerged as educational hubs, hosting tutorials and informational content.

Even though these platforms are convenient, but users need to be careful. A lot of users tend to believe whatever they see online, but it's crucial to assess information critically, think about different points of view, and be aware of possible biases. Frequently, individuals utilize online platforms to disseminate disinformation. The swift and effortless circulation of information on social media, news websites, and digital spaces makes it an appealing channel for spreading deceptive content. Misleading narratives can capture interest as users share them, exploiting the viral dynamics of online interactions. Various platforms employ algorithms to boost user engagement, potentially amplifying disinformation by prioritizing sensational or provocative content unintentionally. In many online settings the absence of rigorous fact-checking mechanisms enables misinformation to endure without being adequately contested.

2.4 Disinformation and Pakistan

Disinformation poses a significant challenge in Pakistan, where the rapid expansion of digital connectivity has facilitated the swift dissemination of information. The country has experienced occurrences of deceptive narratives, inaccurate news, and manipulated content circulating across diverse online platforms and social media channels (Naeem & Rehmat, 2023). Addressing this challenge requires a comprehensive approach, involving government initiatives, media literacy campaigns, and collaboration with technology platforms. The focus should be on enhancing digital literacy among the general public, implementing effective fact-checking mechanisms, and fostering transparent communication channels to mitigate the impact of false narratives on public perception and decision-making processes. As the digital landscape is evolving, proactive measures are crucial to safeguard the information ecosystem and promote a more informed and resilient society in Pakistan.

2.5 Disinformation and Pakistani Youth Vulnerability

The exposure of youth, particularly university students, to disinformation is underscored by their developmental stage and digital engagement. Universities, traditionally regarded as hubs of critical thinking, are not immune to the influence of disinformation. Adolescents and young adults are in a crucial phase of identity formation and are more prone to experimentation with new ideas (Steinberg, 2014). Studies indicate that this segment, characterized by high digital literacy, may ironically struggle in determining the credibility of online information (Livingstone & Helsper, 2008).

2.6 Summary

This literature review establishes a foundation for the subsequent chapters by synthesizing key concepts and findings. It highlights the complex interplay between disinformation and university students, emphasizing the need for targeted research to inform strategies that mitigate the impact of deceptive information on the intellectual development of the youth

2.7 Proposed Hypotheses

Hypothesis 1: Youngsters perceive disinformation as a serious issue having negative impact on the Internet users.

Hypothesis 2: Youngsters have negative attitude towards the spread of disinformation.

Hypothesis 3: Youngsters trust the resources they use for getting information online.

Hypothesis 4: Youngsters like to consume more information from the platforms they trust.

Hypothesis 5: Majority of the youngsters are aware of fact checking processes.

Hypothesis 6: Majority of the youngsters are engaged in fact checking process to authenticate the news they get online.

Hypothesis 7: The level of awareness of youngsters about fact checking has a significant impact on their own fact checking practices.

Hypothesis 8: The perception of disinformation of youngsters has a significant impact on their level of trust in information sources.

3. Methodology

The research design for this study adopts a quantitative approach to systematically investigate the perceptions and impact of disinformation among university students. The objective is to apply appropriate statistical tools to test the proposed hypotheses.

3.1 Research Design

A cross-sectional research design was employed to collect data at a single point in time, allowing for a snapshot of the prevalence and impact of disinformation on university students. This design was chosen for its efficiency in gathering a wide range of data from a diverse sample.

3.2 Population and Sample

The target population was university students enrolled in Pakistani universities, having diverse academic disciplines and socio-economic backgrounds. Data for the research was collected from 10 universities located all over Pakistan that have a mass communication or journalism department and are partners in the Coalition Against Disinformation (CAD). These mass communication departments and institutions are associated with the following universities: the Balochistan University of Information Technology, Engineering and Management Sciences (BUIITEMS) based in Quetta, the Centre for Excellence in Journalism (CEJ) at IBA in Karachi, the Fatima Jinnah Women University and the Rawalpindi Women University both based in Rawalpindi, the International Islamic University Islamabad (IIUI), the National University of Sciences & Technology (NUST), RIPHAH University and SZABIST all in Islamabad, along with the University of Karachi and the University of Peshawar. To ensure equitable representation, the research team attempted to collect responses from a sample of 100 students from each university. Initially 1,115 responses were collected from 10 universities of Pakistan. By using the multivariate outlier technique, out of total responses 72 respondents were classified as outliers because of having an unusual combination of the values. After the exclusion of outliers, the final sample size of 1,043 was used for further analysis.

3.3 Sampling Technique

The sample was chosen by using non-probability based Convenience Sampling Technique.

3.4 Data Collection Method

Data collection involved the engagement of two research volunteers from each university, totaling 20 volunteers. The research volunteers were students of mass communication or journalism at the undergraduate or graduate level. These volunteers administered structured questionnaires to student respondents on their campuses to gather information. The data collection process was conducted concurrently through Google Forms for online responses and traditional paper-based questionnaires for offline responses. Participants were given a clear explanation of the research objectives, and informed consent was obtained before data collection. Anonymity and confidentiality were guaranteed to encourage honest responses.

3.5 Data Analysis

Quantitative data was analyzed using statistical software (e.g., SPSS). After data cleaning, descriptive statistics were employed to summarize demographic information and participants' responses. Inferential statistics, including correlation analyses and regression modeling, were applied to identify relationships between variables and infer potential predictors of susceptibility to disinformation.

4. Results and Analysis

In this chapter, we present the empirical findings derived from our comprehensive investigation on the topic of the impact of disinformation on Pakistani Youth. The purpose of this section is to objectively report and analyze the collected data, shedding light on the outcomes of our study.

4.1 Summary Profile of Respondents

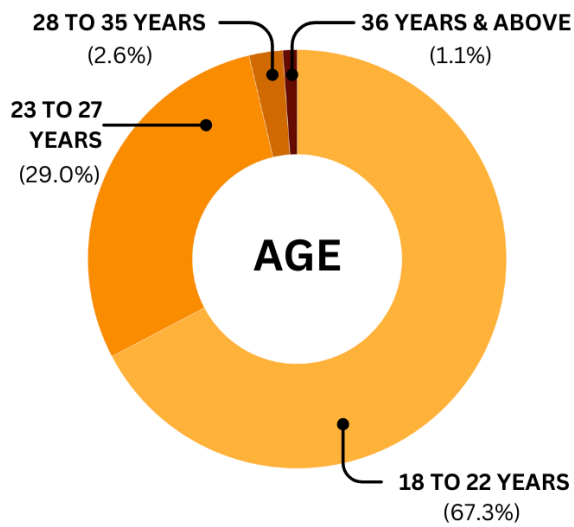
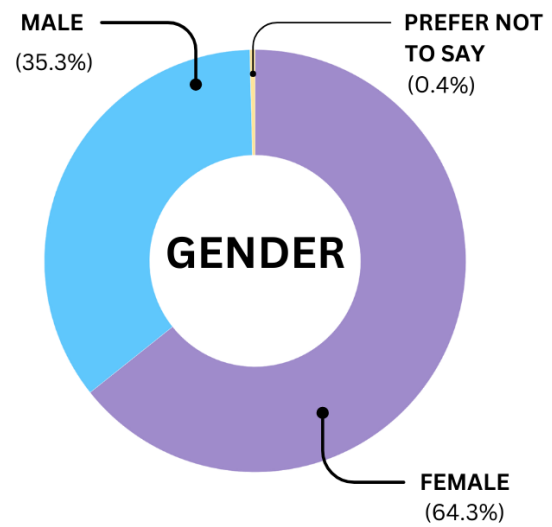
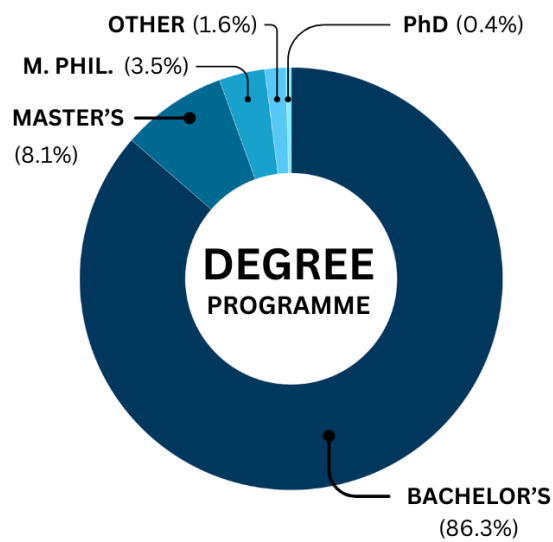
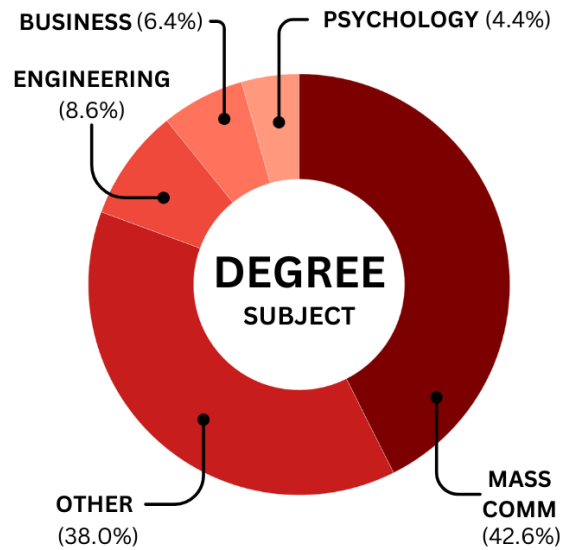
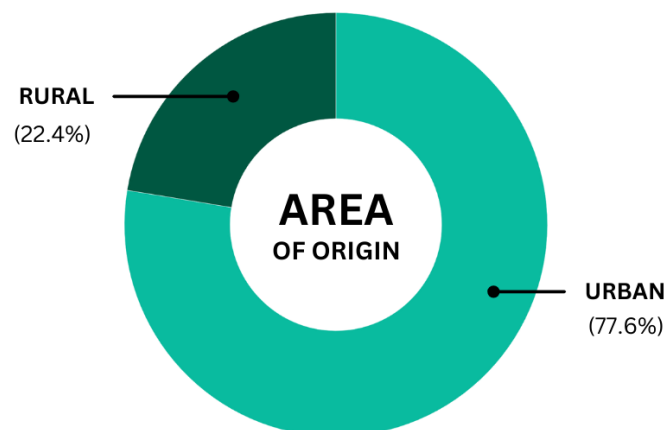
The survey asked demographic questions regarding research participants' gender, age, ongoing educational level, degree program and area of origin. According to the survey response data, 64.3% of respondents were female while 35.3% were male. Almost 96.3% of respondents were between 18 to 27 years old. More than 94 % of respondents were enrolled in either bachelors or master degree programs. Around 42% respondents were student of mass communication and 38% were studying various other disciplines including pharmacy, medicine, social sciences etc. Almost 78% of the respondents belonged to urban areas while 22% were from rural areas.

4.2 Information Consumption Practices

To gauge the online news consumption habits of university students, we inquired about their frequency of using the internet to access news and information. The results indicate over half of the respondents use the Internet more than once every day and another one-third access it daily, showing that cumulatively around 82.7% of respondents utilize the internet at least once a day to access news online. Notably, none of the respondents chose the "never" option, indicating that nearly every university student uses the internet to stay informed and access the latest news. It shows that youngsters have a significant dependence on online platforms for news consumption.

4.3 Perception of the Prevalence of Disinformation

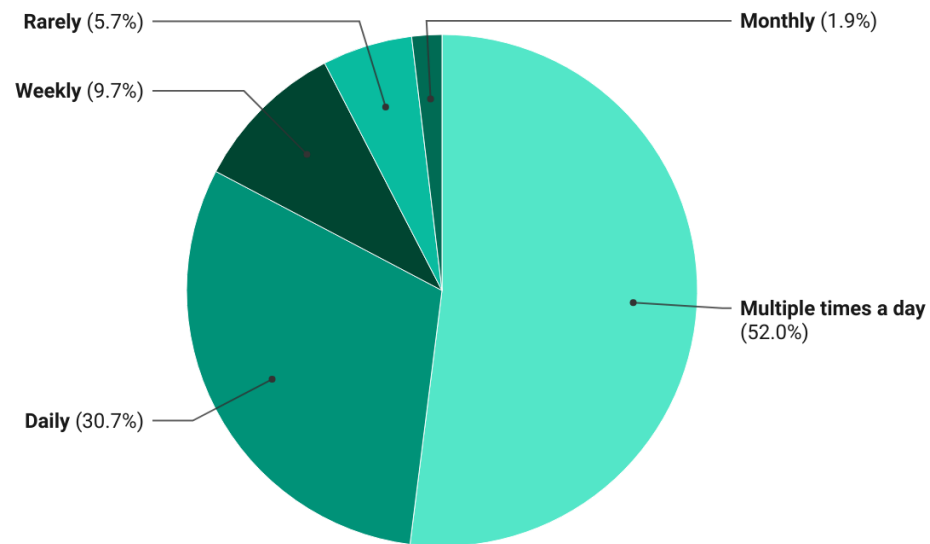
The study inquired how frequently the respondents felt exposed to online disinformation.. The results reveal that altogether 63.2% of respondents believed they encountered disinformation at least once a day while using the internet. This includes all those respondents who felt they come across online disinformation more than once every day. Approximately 17.5% of respondents indicated exposure once a week, with only 20% suggesting exposure on a monthly basis or less. Interestingly, none of the respondents believed that they were never exposed to online disinformation during their Internet activity.



Note: The total number of respondents for each pie chart is 1,043.

Online Information Consumption

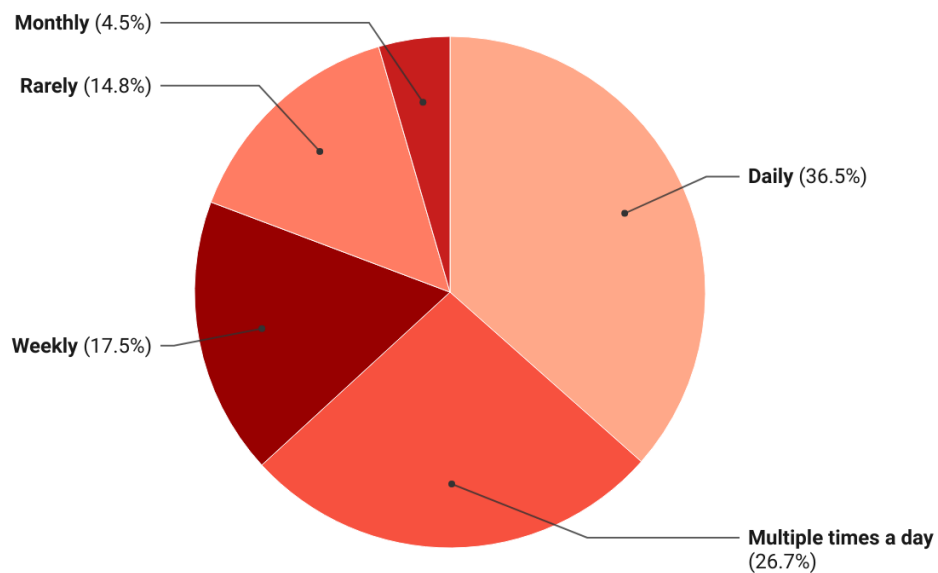
How frequently do you access news and information on the Internet?



Total number of respondents: 1,043

Perceived Exposure to Online Disinformation

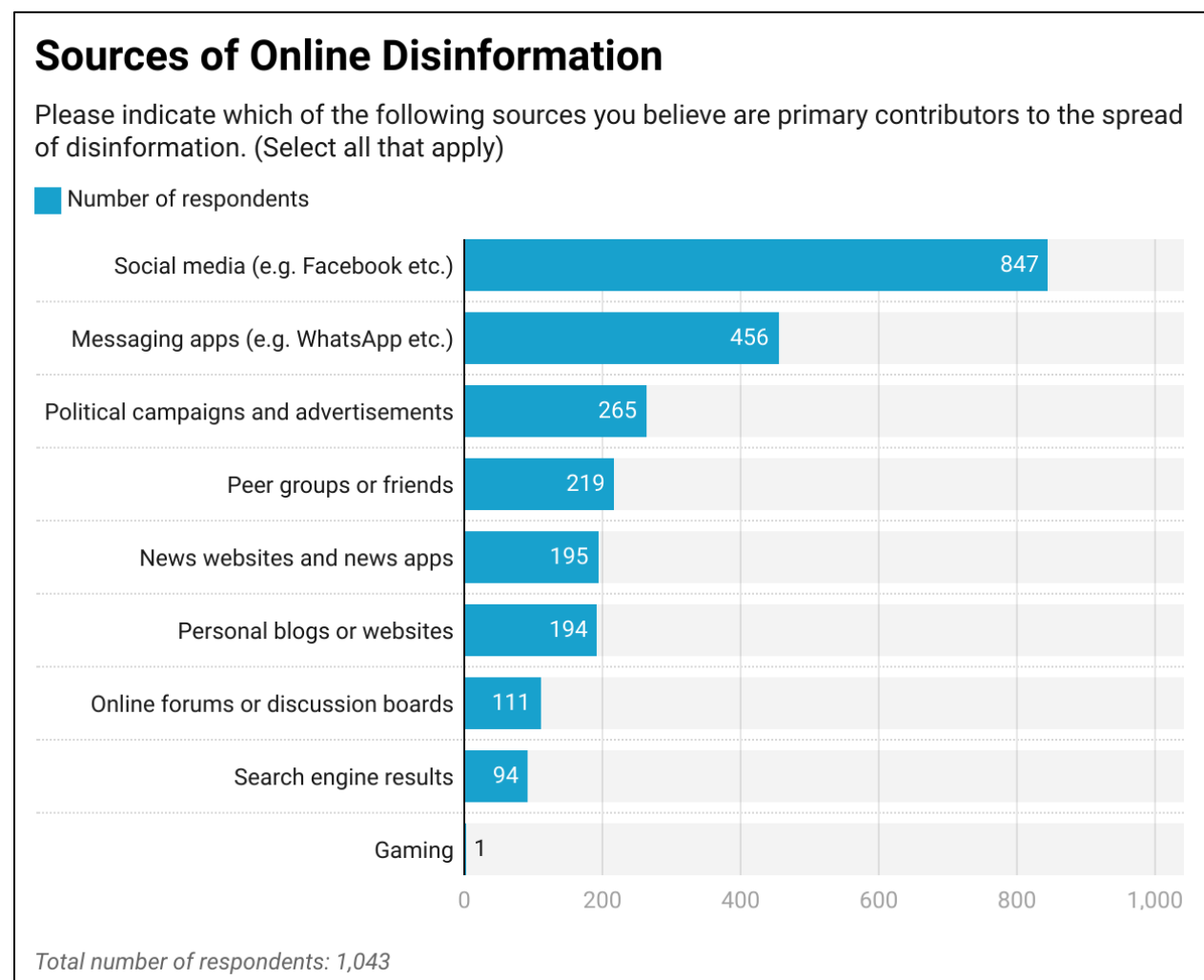
How often do you believe you encounter disinformation when consuming news or information online?



Total number of respondents: 1,043

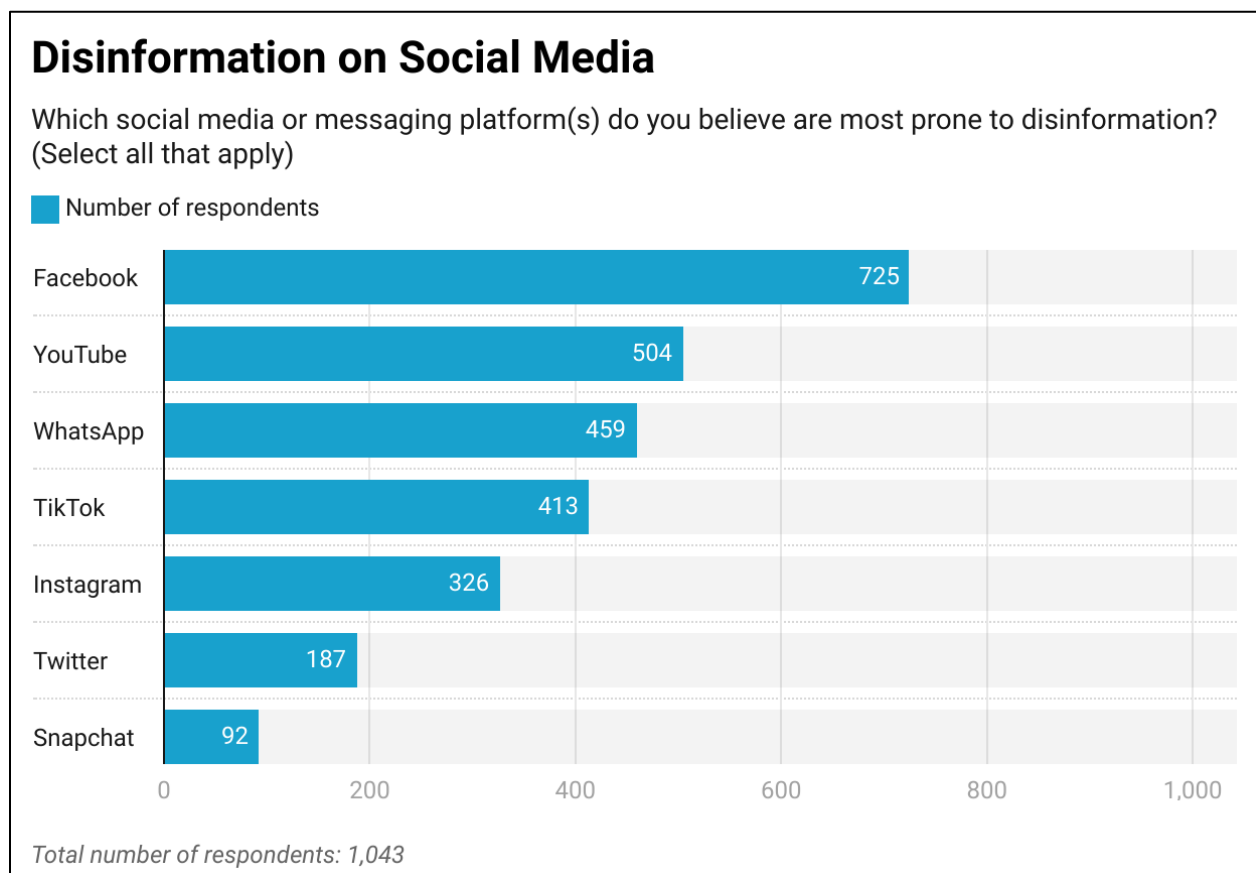
4.4 Major Sources of Disinformation:

Exploring the primary sources of online disinformation among university students was a pivotal aspect of this study. The findings suggest that social media platforms, such as Facebook, Twitter, and Instagram, are perceived to be the predominant channels for online disinformation, with 847 respondents (81%) identifying these channels. Notably, messaging apps such as WhatsApp and Messenger were also heavily considered as sources of spreading disinformation, receiving 456 mentions (43%), highlighting their perceived influential role in the dissemination of misleading information. Furthermore, political campaigns & advertisements and personal blogs or websites got 265 (25%) and 194 (18%) mentions respectively. Similarly, peer groups and friends 219 (21%), news websites or apps with 195 (19%) and 94 (9%) relying on search engine results. Interestingly, gaming emerged as a source for only one participant, suggesting a unique perspective within the disinformation landscape.



4.5 Social Media Platforms Prone to Disinformation

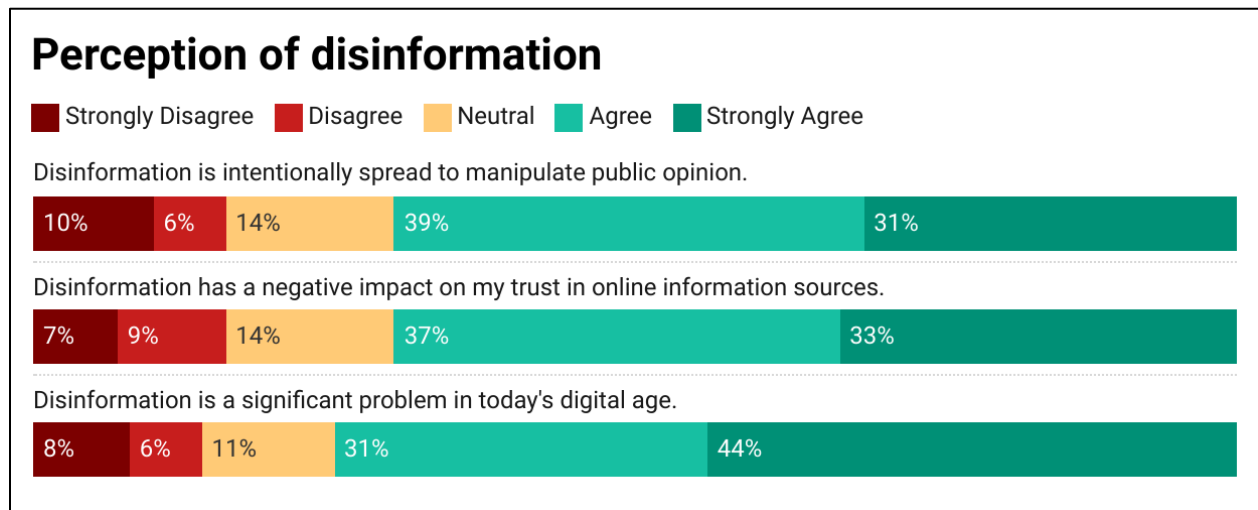
One of the primary objectives of this study was to identify the major social platforms susceptible to disinformation. The results indicate that Facebook, YouTube, and WhatsApp emerged as the top-ranked platforms among all social media and messaging apps. According to the survey, Facebook stood out with 725 respondents (69.5%) identifying it as the most prone online tool to disinformation, followed by YouTube and WhatsApp with 504 (48%) and 459 (44%) respondents, respectively. In contrast, Snapchat had the lowest number, with only 92 (8.8%) respondents marking it as susceptible. This stimulates an investigation whether the varying susceptibility of a particular online tool is influenced by its widespread social acceptance or usage, or if users have genuine doubts about the tool.



4.6 Perceptions about Disinformation

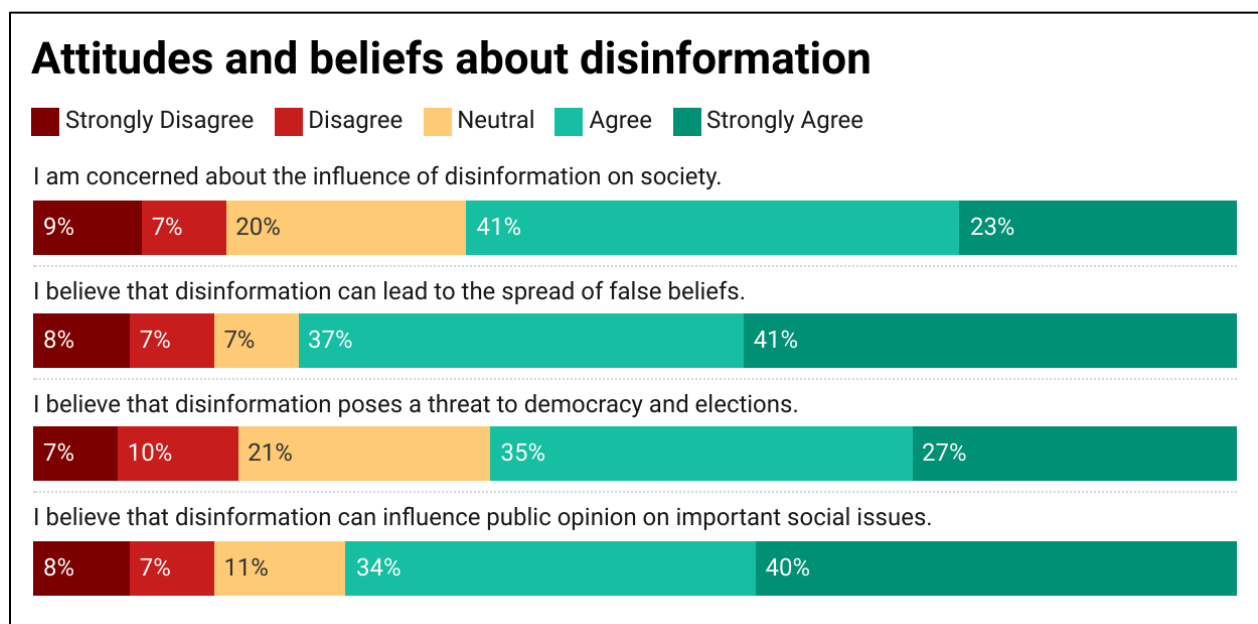
Most respondents thought of disinformation is a negative phenomenon. Out of the 1,043 students, altogether 75% either strongly agreed or agreed with the statement that disinformation is a “significant problem”. Around 7 out of 10 students felt the presence of online disinformation negatively affects their level of trust in receiving information on the Internet. Another 70% of the

respondents also correctly identified the definitional aspect that disinformation is spread “intentionally”.



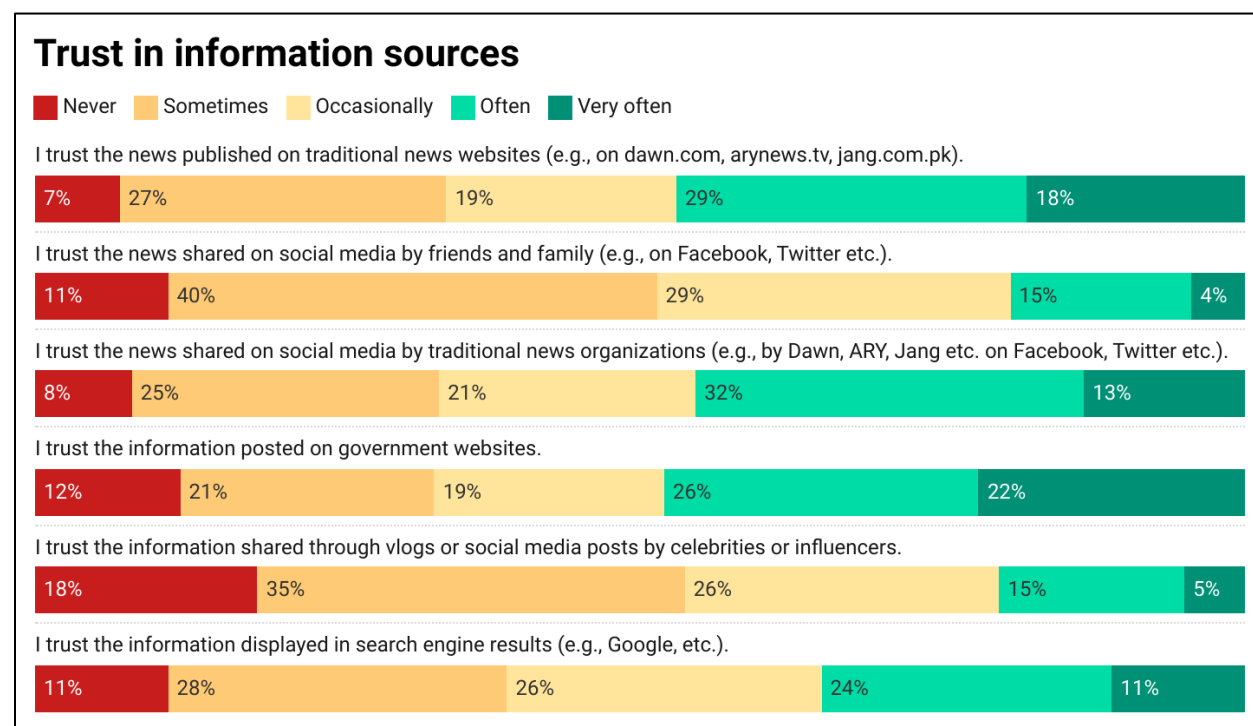
4.7 Attitudes and Beliefs about Disinformation

The respondents were asked about their views on the impact of disinformation to determine if they held certain attitudes and beliefs about effects of false information on civic life. A majority of the respondents agreed or strongly agreed (altogether 64%) that the influence of false messages on society was a cause of concern for them. Another 68% altogether appeared to agree that disinformation can mislead people into holding beliefs that are false. Similarly, 62% agreed or strongly agreed that disinformation threatens the integrity of our democracy and elections.



4.8 Trust in Information Sources

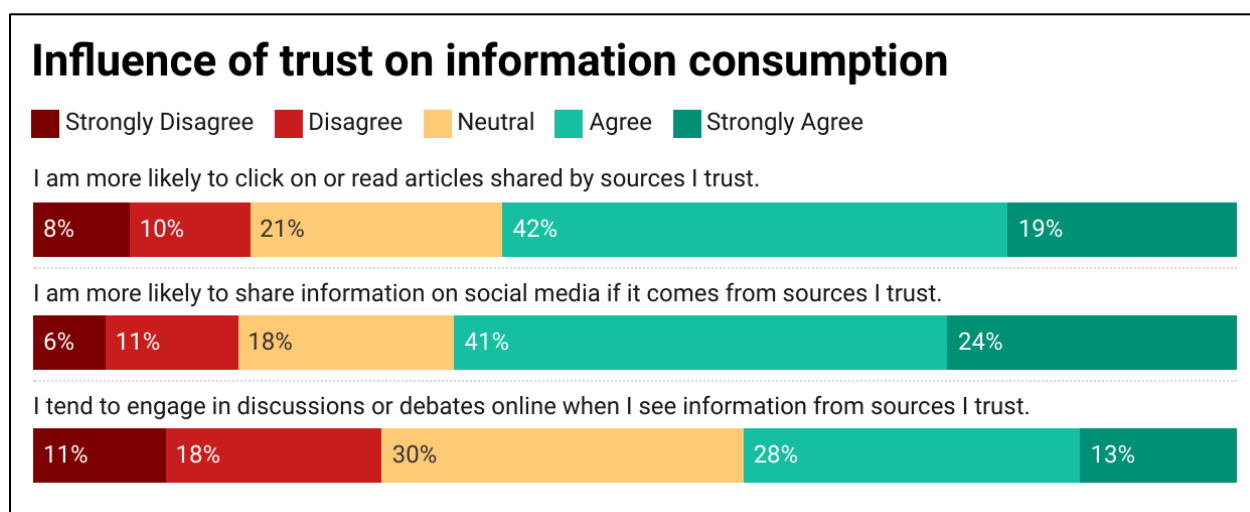
The levels of trust of the university student survey respondents varied with the nature of sources. Nearly a quarter of the respondents said they very often trust information posted on government websites, indicating the official version of information holds weight and authority with the youth. Around one in every three respondents also said they “often” trust information shared by traditional news organizations on their main websites or through their social media accounts. Traditional news outlets were also seen with least skepticism overall, with only 7% saying they never trust the news media. On the other hand, Pakistan university students seemed wary of non-traditional sources of online information, with fully 18% saying they never trust information posted on vlogs or social media by celebrities and influencers. But opinion seemed divided on influencers, with one in every five respondents also trusting their opinions with regularity. Around a quarter of the students also said they would often trust the information that appears in the top search results of popular search engines such as Google, regardless of what those sources on the search engine results page might be.



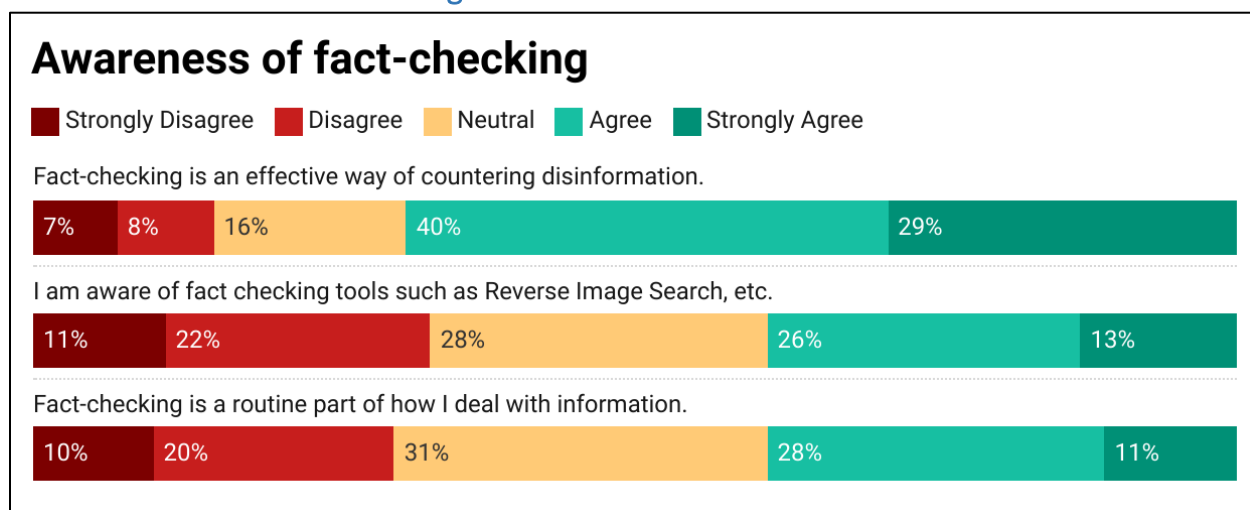
4.9 Influence of Trust on News Consumption

In terms of how their level of trust affects their judgement about news consumption, most respondents said they were likely to click, read, and share information if it comes from the online

sources that they trust. However, in terms of engaging in debate, the responses seemed to indicate that students either did not engage in online discussions when they saw trustworthy information or they engaged in online debates even if the information they came across was from a source they did not particularly trust. This finding indicates that youth might be entering debates also to critique, challenge or confront opposing point of views online.



4.10 Awareness of Fact-checking

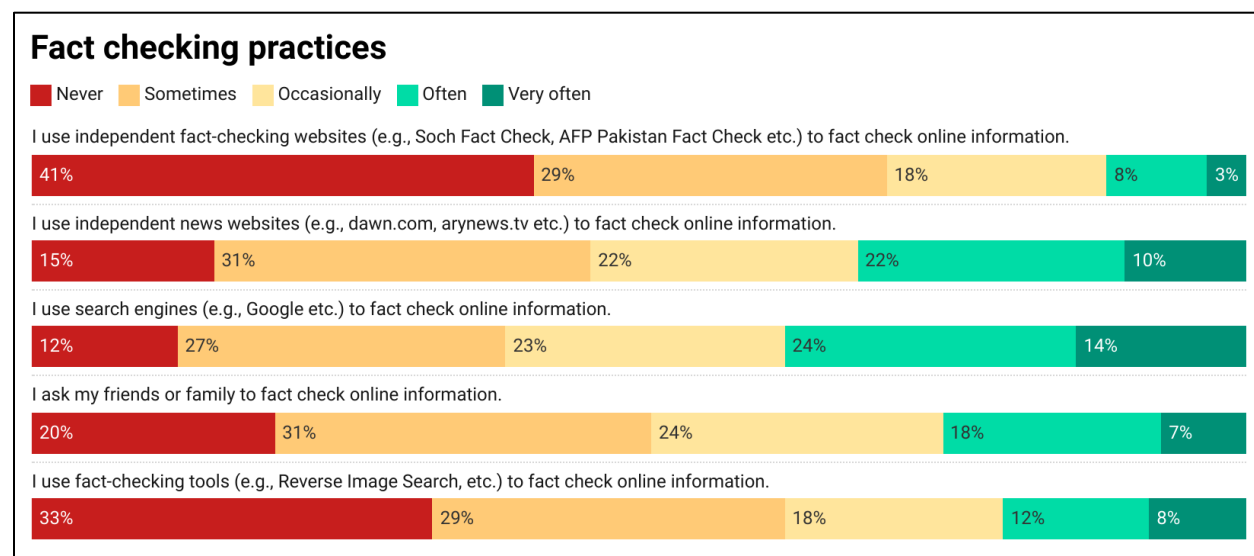


Most respondents said they think fact-checking is an effective way to counter disinformation – around 40% agreed and 29% strongly agreed with this sentiment. But many were unaware of common professional fact-checking tools and did not appear to consciously verify acts as a regular part of their online information consumption. However, the silver lining in this case according to the survey results is that around four in 10 respondents agreed or strongly agreed

that they are aware of fact-checking tools and routinely fact-check while processing information on the Internet. These students might be crucial in informing their peers about fact-checking for countering online disinformation.

4.11 Fact-checking Practices

Similar trends were noticed in the responses regarding the in-depth questions about use of specific fact-checking tools and resources by the students. Around one in every three students had never referred to the fact-checks published by the formal and most consistent professional fact-checking services operating in Pakistan. Most respondents also infrequently used news websites, search engines, and friends & family networks to specifically inquire about the veracity of some online information they came across. One interpretation of this finding could be that even if young people come across information that they feel is suspicious or cannot be trusted, only a minority among them might be tempted to apply critical thinking and consistently try to determine if the information is really true or false.



4.11 Statistical Analysis

The research also examined the proposed hypotheses and their outcomes to provide a measure of generalizability to the above mentioned findings.

If a hypothesis is accepted, in layman's terms it means that it is proven true and there is insufficient evidence based on the data to overturn the statement.

Two distinct analyses were conducted on the data for the hypotheses testing: one-sample T-test and regression analysis. Given that a one-sample T-test is employed to assess whether the sample mean value differs significantly from an estimated population value, in this instance, a one-tailed t-test is executed. The statistical analysis provided the following results:

Hypotheses that were accepted:

1. Youngsters perceive disinformation as a serious issue having negative impact on the Internet users.
2. Youngsters have negative attitude towards the spread of disinformation
3. Youngsters trust the resources they use for getting information online
4. Youngsters like to consume more information from the platforms they trust
5. The level of awareness of youngsters about fact checking has a significant impact on their own fact checking practices.
6. The perception of disinformation of youngsters has a significant impact on their level of trust in information sources.

Hypotheses that were not accepted:

1. Majority of the youngsters are aware of fact checking processes.
2. Majority of the youngsters are engaged in fact checking process to authenticate the news they get online.

5. Discussion and Conclusion

This research was conducted by CAD in collaboration with various Pakistani universities featuring mass communication departments, with the objective to assess the impact of disinformation on university students of Pakistan. The research findings indicate the following key characteristics:

1. Internet universality: Pakistani university students are proficient in using internet to access information and news.

2. Social disinformation mediums: Although they frequently employ online tools to obtain information or news, there is also a recognition among the students that such utilization carries the risk of being influenced by disinformation. According to them, social media tools and messaging apps stand out as the primary sources of disinformation in Pakistan. Notably, Facebook, YouTube, and WhatsApp are ranked highest among all other social media and messaging apps, perceived to be playing a significant role in the dissemination of disinformation.

3. Disinformation conscious: The findings also demonstrate the awareness among students that such access to online information on social media networks may play a role in the deliberate spread of false news or misinformation. Their understanding of exposure to the false news is very clear and they understand that this may have very negative consequences on their opinions or pattern of thinking. This makes them cautious about it and having this alert attitude makes them conscious while consuming online information, even though it might not necessarily translate into remedial actions. However, their skepticism towards online sources generally diminishes trust levels, but when information originates from reliable sources, their consumption tends to have a positive inclination.

4. Mostly missing fact-checking: A significant majority of university students lack awareness of fact-checking mechanisms. This unfamiliarity reflected in their fact-checking behavior, with the majority refraining from engaging in any fact-checking processes. The findings strongly suggest that the level of awareness regarding fact-checking processes significantly influences students' fact-checking habits. Those with higher awareness demonstrated greater involvement in fact-checking practices. To encourage students to fact-check every online news item before acceptance or dissemination, efforts should focus on enhancing their awareness of the fact-checking process.

6. Recommendations

On the basis of research findings, the following practical and policy recommendations are provided with an aim to equip university students with the skills to navigate the information ecosystem critically, while also addressing systemic issues related to the spread of disinformation.

Practical Recommendations:

- **Media Literacy Programs:** Introduce comprehensive media literacy programs in universities, preferably through journalism and mass communications departments. These programs should aim to educate students on identifying and mitigating the impact of disinformation, covering critical thinking skills, source evaluation, and fact-checking techniques.
- **Incorporate Fact-Checking in Curriculum:** Integrate fact-checking mechanisms and media literacy modules into the academic curriculum, ensuring that students are equipped with the necessary skills to critically assess information as precursor to their journalism careers.
- **Promote Critical Thinking Skills:** Organize workshops and seminars with a focus on enhancing critical thinking skills among students. Foster an environment that encourages questioning information, verifying sources, and analyzing content before accepting it as factual.

Policy Recommendations:

The following are recommendations for government entities or agencies responsible for formulating policies or laws.

- **Government Collaboration with Social Media Platforms:** Establish collaborations with social media platforms like Facebook, YouTube, and WhatsApp or their local representatives to formulate and execute strategies aimed at curtailing the dissemination of disinformation. Policies should address the responsibility of these platforms in monitoring and restricting false information.

- **National Media Literacy Campaign:** Initiate a national media literacy campaign in support with government bodies, NGOs, media development groups and educational institutions. This campaign should target a wide audience, emphasizing the importance of media literacy in navigating the digital information landscape.
- **Fact-Checking Initiatives:** Allocate resources for the establishment and promotion of fact-checking initiatives at the national level. Support organizations dedicated to fact-checking and disinformation prevention, fostering a culture of verification and accountability. Support interfacing between local fact check organizations and journalism departments.
- **Institutionalized Reporting Mechanisms:** Establish institutionalized reporting mechanisms for disinformation. Foster a collaborative approach by encouraging students and the public to report instances of false information, thereby creating an effective strategy to address and counter disinformation.

Annexure 1: Details of statistical results

Hypothesis #1: Youngsters perceive disinformation as a serious issue having negative impact on the internet user.

Result: Accepted

The chosen test value of 3.5 or greater indicates people consensus about the negative impact of disinformation on consumers of online news. The hypothesis has been accepted as the sample mean value is significantly greater than test value 3.5, stating that youngsters studying in universities believe that disinformation is seriously impacting on public opinion and it shows their concern about disinformation.

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
mean_PDI	1043	3.8290	1.0961	.03394

One-Sample Test

	Test Value = 3.5					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
mean_PDI	9.694	1042	.000	.329018	.262416	.395621

Hypothesis # 2: Youngsters have negative attitude towards spread of disinformation.

Result: Accepted

The chosen test value of 3.5 or greater in the test indicates that people have negative attitude towards disinformation spread and have high concerns to deal with it. The hypothesis has been accepted as the sample mean value is significantly greater than test value 3.5, stating that youngsters have a negative attitude towards disinformation and implying that they don't like disinformation to be spread among the masses.

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
mean_Att	1043	3.7776	1.07309	.03323

One-Sample Test						
	Test Value = 3.5					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
mean_Att	8.354	1042	.000	.27756	.2124	.3428

Hypothesis # 3: Youngsters trust the resources they use for getting information online

Result: Rejected

Here the chosen test value 3.5 or greater represents that on average people trust the online sources they use to receive information. The hypothesis has been rejected as the sample mean value is significantly less than test value 3.5, stating that youngsters don't trust the online sources of information that they use. It shows that youngsters have a doubt about the authenticity of the information while using internet.

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
mean_trust	1043	2.9585	.80838	.02503

	Test Value = 3.5					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
mean_trust	-21.635	1042	.000	-.54155	-.5907	-.4924

Hypothesis # 4: Youngsters like to consume more information from the platforms they trust.

Result: Accepted

The hypothesis has been accepted as the sample mean value is close to the test value 3.5 and sig value is greater than 0.05, stating that when youngsters are using any trusted platform their information consumption is greater. It suggests that social media platforms should try to develop consumers trust on their platforms.

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
Mean Infl	1043	3.4503	.94516	.02927

One-Sample Test						
	Test Value = 3.5					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Mean Infl	-1.698	1042	.090	-.04970	-.1071	.0077

Hypothesis # 5: Majority of the youngsters are aware of the fact checking process.

Result: Rejected

The hypothesis has been rejected as the sample mean value is significantly less than the test value 3.5 or more, stating that on average youngsters are not aware about the fact checking process. It shows that although most of the youngsters are doubtful about the information authentication but have no idea about the fact checking websites or process.

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
mean aware	1043	3.30616	.9537	.029531

One-Sample Test						
	Test Value = 3.5					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
mean aware	-6.564	1042	.000	-.193831	-.251779	-.135884

Hypothesis # 6: Majority of the youngsters are engaged in fact checking process to authenticate the news they get online.

Result: Rejected

The test value 3.5 or above shows that on average youngsters are engaged in fact checking practices. This hypothesis has been rejected as the sample mean value is significantly less than test value 3.5, stating that youngsters are not involved in the fact checking process.

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
mean_factcheck	1043	2.565	.8548	.0265

One-Sample Test

	Test Value = 3.5					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
mean_factcheck	-35.313	1042	.000	-.9347	-.987	-.883

Hypothesis # 7: The level of awareness of youngsters about fact checking has a significant impact on their own fact checking practices.

Result: Accepted

The results indicate R-square value of 0.231, stating that 23.1% of the variability in fact-checking practices behavior can be explained by the awareness level of fact-checking among the youngsters. The significance value in the ANOVA table is less than 0.05, indicating that the model is a good fit. Moreover, in the coefficient table, the significance value of mean awareness is less than 0.05, demonstrating that the awareness level of fact-checking among youngsters significantly influences their fact-checking practices.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.481 ^a	.231	.230	.7500

a. Predictors: (Constant), mean_aware

ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	175.936	1	175.936	312.815	.000 ^b
Residual	585.488	1041	.562		
Total	761.424	1042			

a. Dependent Variable: mean_factcheck

b. Predictors: (Constant), mean_aware

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.141	.084		13.611	.000
mean_aware	.431	.024	.481	17.687	.000

a. Dependent Variable: mean_factcheck

Hypothesis 8: The perception of disinformation of youngsters has a significant impact on their level of trust in information sources.

Result: Accepted

The result shows that value of R square is 0.141, indicating that 14.1% of the variability in youngsters' trust in online information sources can be explained by their perception of disinformation. The sig value in ANOVA table is less than 0.05, showing that model is fit. Furthermore, in the coefficient table, the sig value of mean trust is less than 0.05, showing that youngsters perception of disinformation has a significant impact on their trust on information sources.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.375 ^a	.141	.140	.749607234589354

a. Predictors: (Constant), mean_PDI

ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	95.973	1	95.973	170.797	.000 ^b
Residual	584.949	1041	.562		
Total	680.922	1042			

a. Dependent Variable: mean_trust

b. Predictors: (Constant), mean_PDI

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.898	.084		22.500	.000
mean_PDI	.277	.021	.375	13.069	.000

a. Dependent Variable: mean_trust

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