Application of Cognitive Heuristic by Young Adults in Evaluating Social Media News

*1Prativa Rai and 2Dr. Shashikant Sharma

*1Ph.D. Scholar, Department of Journalism and Mass Communication, Himachal Pradesh University, Shimla, India.

2Professor, Department of Journalism and Mass Communication, Himachal Pradesh University, Shimla, India

Abstract

Social media popularity has changed the way people consume news. Young adults who are a big section of social media consume their news when using social media, which aligns with their busy lifestyle. However, the absence of conventional gatekeeping procedure and abundant information overwhelms and challenges cognitive ability of users than ever before. The use of mental shortcuts called heuristics are applied to make quick and effective decisions, given the fact that human cognitive ability is bounded. This qualitative research through focus group discussion examined methods of news evaluation commonly used in a social media environment. Based on interpretative analysis, participants were found using source credential, message acceptability and individual attributes as evaluative measures. All these methods point to the use of heuristic cues or short cut methods which helped users to quickly identify a credible piece of news within the constraints of available time and resources.

Keywords: Cognitive heuristic, social media, bounded rationality, online news credibility, young adults

Introduction

At present, young people often find traditional news and news media dull, difficult to comprehend, and unrelated [1]. They are well acquainted with social media and often keep up with news through the use of social media like Facebook, Twitter, and YouTube etc. unlike any previous generation [2].Their day-to-day lives, the online and offline environments coexist.

Information does not move in a top-down movement but flows freely in social media. The components of communication which are source, message and medium have evolved and can be seen overlapping. Also, communication takes place in both synchronous and asynchronous pattern. These development have changed the conventional restricted media evaluation process which was based on one-way communication process [3].

The filtering and standard gatekeeping of traditional media is not effective in an online environment. However, credibility of online news is also important to avoid negative consequences. Multiple research have found prevalence of online fake news which has negatively impacted credibility of online news [4].

When a problem is encountered and a decision has to be made, human problem solving behaviour is often automated. Simon's theory of bounded rationality asserts human rationality as partial and limited which takes decisions based on accessible resources. Human rationality is constrained and cannot function like a machine [5].The process of cognitive heuristic is adopted to find quick and most fitting solutions. Heuristic are short cuts which are taken from previous experience and made use in the present scenario to find a solution [6].

This idea has been examined in the research with the following research objective:

- To determine if heuristic assessment methods are employed for social media news evaluation by young users

Given the growing volume of available information and online news sources, this study is pertinent. Real-world decisions are made in an uncertain environment with limited cognitive capacity. So to produce effective output without exhausting cognitive capacity, only pertinent and limited information is taken in and processed.

News in Social Media

According to Park [7], news is information that provides knowledge. Mencher [8] uses terms like proximity, timeliness, uniqueness and impact to define news.

People are driven to consume news either by a desire to learn more about their surroundings or by the satisfaction of surveillance. It may also lead recipients to become involved in politics or the community [9].

With the introduction of social media networking sites, news consumption patterns have changed. Instagram, Facebook,

*Corresponding Author: Prativa Rai

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and Twitter became popular places to consume news. The internet was used more for information consumption than other forms of sources such as newspapers, books, television, phone calls, email and even face-to-face communication. Participants' most common motivation for using the internet was information seeking [10].

However, in an online environment, the free flow of information also led to exploitation and an excessive increase in information error. Print, radio, and television all have different levels of gatekeeping that include fact verification, content analysis, and editorial review. The vast majority of information available online is not subjected to such scrutiny.

According to Metzger, Flanagin, & Medders [3], users of social media are provided with a variety of options in a news feed, allowing them to actively choose what to read, comment on, and disseminate. When people choose which feeds to click, follow, and consume, the credibility evaluation occurs.

Receiving an excessive amount of information is known as information overload. It occurs when there is an excessive amount of information that cannot be processed. When information processing method exceeds receiver's capacity, it is known as information overload. This concept states that individuals have limited capacity for information processing [9].

With an increase in news, users also experience an increase in feelings of overwhelm, so when news stories come across users, it challenges and demands their cognition level [11].

An Introduction to Credibility
Credibility is an essential part of a process where the object of a source or message is to influence attitudes, behaviour or knowledge [12]. Based on the study of Aristotle's rhetoric and persuasion, credibility is linked to authority [13].

However, academics in the field of mass communication are also studying credibility as a message variable [4]. Sundar [14] found that message credibility was closely associated with objectivity.

Media credibility is another aspect of this domain that has been studied. According to Metzger [4], it is the study of media forms like television and print and how they influence persuasion in communication.

Trust in news has declined since the post-broadcast period. News outlets have created a fiercely competitive environment, which has led to an increase in negative news and news interpretation [15].

Credibility is a multifaceted concept that includes sender, message, receiver, medium and their relationship dynamic [16]. Believability, trustworthiness, and likeability are terms which are commonly associated with credibility [17].

Use of Cognitive Heuristic for News Evaluation
To learn, young users require timely and accurate information. They will end up believing misleading information if they are unable to distinguish fact from fiction. This may result in their adoption of inaccurate information and biases as well as their dissemination of such information [4].

A study of college students in U.S. found that more than two-thirds of the participants admitted getting overwhelmed with availability of abundant news [18].

According to Metzger & Flanagin [19], young web users have a harder time recognizing information that is trustworthy, making them more likely to mistakenly accept a source's self-asserted credibility. Even if they do not consider them credible, they frequently rely on convenient sources [20].

It has long been recognized by cognitive scientists that people have limited capacity for information comprehension. Due to limitations imposed by external circumstances (such as time) and the human intellect (such as non-infinite processing) Simon's [21] theory of bound rationality asserts that humans are not always capable of acting rationally in an absolute manner. According to Todd & Gigerenzer [22], a decision maker must arrive at a conclusion using practical amounts of time, knowledge, and computational resources because human cognitive function is based on the principle of minimal effort to make a decision.

According to Fogg's [23] Prominence-Interpretation Theory of web credibility, a user will first notice a cue which will be followed with interpretation of the cue, and this process is followed until the user will achieve the desired outcome or when user's ability is impeded with other factors such as energy, time, social environment etc. to look and analyse more cues.

Previous research has asserted the influence of heuristic cues on valuations of online information. Source citations, author identity, and website layout are examples of a few cues found among the total number of 25 cues reported by Metzger [24]. Thirteen peripheral cues were examined by Huerta & Ryan [25] which were categorised as: cues from the website, the source author, and the message. According to Dang-Pham, *et al.* [26] research on Facebook, heuristics like visual element, source familiarity, user engagement, expertise, user beliefs and attitudes were the prominent identified cues.

Numerous studies on human cognition have shown that people don't always use exhausting evaluation methods; rather, they tend to use effective shortcuts to reach a conclusion [27, 28, 29].

Design & Methodology
Primary research data was collected from college and university students in Delhi. Students from both government and private institutes were approached for participation.

A total number of 31 students participated and five focus group discussions were conducted. The group discussion was recorded for data analysis purposes and to avoid misquoting and misinterpretation. The transcript was transcribed using otter.ai application and manual cross verification was made to check and correct errors in the transcript before data analysis and coding.

Manual coding was used to identify empirical data to answer research question. Three documents were created, initial memo, analytical memo and codebook. Initial memo was the first step to record empirical data with basic labelling of data. Followed analytical memo, which is more detailed. It basically identified how the recorded empirical data answered a research question. This helped in identification of similar data to group them. Here, empirical data was recoded as required. Finally, uniquely identified recoded empirical data was grouped together to form categories of its own and themes were created.

Interpretation focused coding method was used to analyse transcripts. It helped to develop answers to research questions based on interpretation and understanding of empirical indicators. Grouping of similar data, code generation and theme creation were made by following this coding process.

Findings & Discussion
The purpose of this research study was to find commonly used online news credibility evaluation methods by young social media users. From the collected data, seven codes were

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identified which were divided into three themes as given in the table.

Table 1: Popular Evaluation Methods based on identified Codes (Heuristic Cues)

Theme	Description	Code	Code Frequency	Engaged Participants
Source credential	Source credential increases consumer confidence in the news that is received. It builds trust between source and receiver.	Reputed source Expert opinion First hand narrative	25	19
Message acceptability	News content should be verifiable based on facts and void of any biases. An objective news provides genuine information which helps a consumer to understand an issue in the right light	Multiple source verification	26	18
Individual attribute	Personal attribute affects decision making as it navigates one's belief and attitude based on which information is consumed and understood	Age and experience Media study and awareness Discussion with friends	9	8

With data analysis, three popular evaluation techniques were identified which are source credential, message acceptability and individual attribute. Out of the total number of participants; 42% of the participants cited using source credential, 40% of the participants used message credibility and 18% of the participants used individual attributes as a means of online news evaluation. Source credential and message acceptability were the two most frequently used methods. More than half of the participants used them. Only one fourth of the participants used individual attributes in comparison. The frequency of themes usage have been reported as 42% for source credential, 43% for message acceptability and 15% for individual attributes.

Participants searched for the listed codes also cues to identify authentic and trustworthy news. These cues are short cut methods that help to find specific characteristics in a source, message or medium. The presence or absence of these cues helped participants decide if the chosen news is credible for consumption.
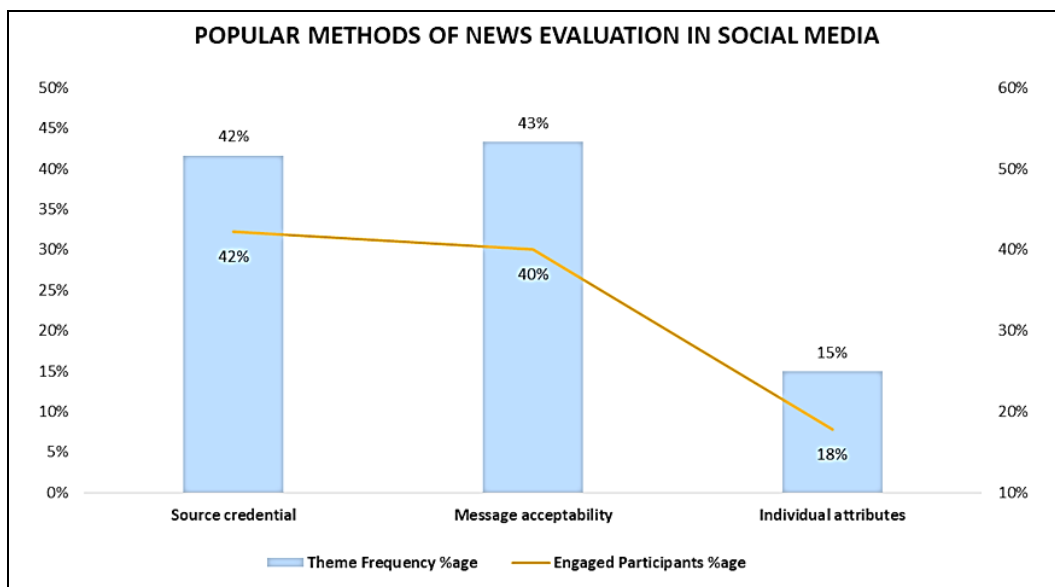

Fig 1: The recurrence of identified themes & participants engagement with the themes

Source Credential
The number of news sources has increased dramatically thanks to social media, but participants did not follow random sources for news. They cited using source credential to evaluate a news story. Under source credential, the common cues they used were reputed sources, first hand narratives and expert opinion.

Reputed source was the most referred cue, this was used by 64% the engaged participants. First hand narratives engagement is 24% followed by expert opinion engagement of 12%.
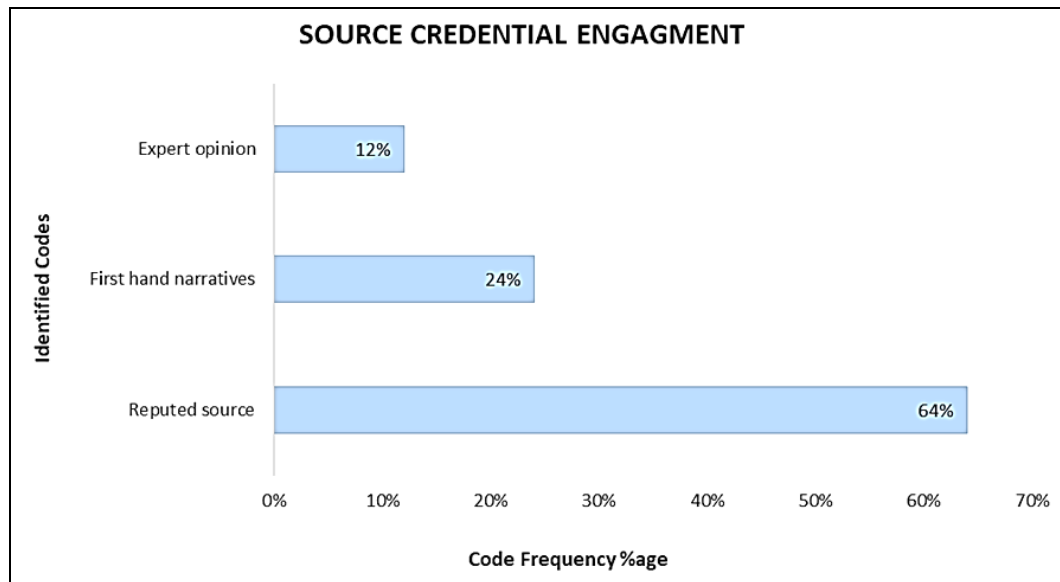
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Fig 2: The recurrence of identified codes under the theme Source credential

When a source is reputed, the factor of trust and credibility is automatically attached with the source. Based on this idea, participants believe news coming from a reputed source and most of the time do not question its credibility.

"I look for sources and the sources are ANI, Reuters or, you know, media always like media houses, or newspapers like The Hindu or The Economic Times. I don't really cross check it because they themselves have built some credibility on their name. (GR 2 P3) "

These organisations have established and maintained their brand over a period of time. They are believed and expected to be ethical and professional given the consequence they can face because of their popularity

"A case could happen to them. And not just the case, there are regulatory bodies that have certain guidelines for news sources. So they have to come and apologize. So you know, it's a belief, when so much is at stake you have to be rigorous with your fact checking and with your source checking. (GR 2 P5)"

Participants are of the opinion that even if reputed sources are biased in their news presentation they will not distort fact presentation. Source reputation is easy to identify and decision making becomes quick.

After source, participants prefer using first hand narratives, especially when there are many versions of the same news story easily available in an online environment and it becomes difficult to identify credible news from fake news.

"I try my best to rely and find first hand narrative because I think secondary second hand narratives, in general, have that tendency to present a trigger for a biased perspective. (GR 1 P2)"

First hand narrative is considered as an undiluted information without media interpretation.

"I would also go to individual people who are not really journalists or freelancers, who would present their or who post their first hand experiences, first-hand knowledge regarding a topic. (GR4 P2)"

This form of news is believed to keep information authenticity intact and encourages credibility between source and receiver.

Finally, some participants used expert opinion when a news topic or subject area was difficult.

"…when I think, that I don't think that I am like capable enough to form any kind of opinion or that I don't know,

understand something. I look out for interviews of experts. (GR 1 P4)"

Participants found knowledge, experience and expertise shared by an expert very helpful in dissecting a subject matter and making it easy to understand. An expert or a number of experts offer different approaches on the same news based on facts and evidence, which makes decision making process easy and less time consuming.

In general, participants have stated that they often keep busy and don't have time to engage in the process of news evaluation. Additionally, the process of news consumption should not be a tiring process. So, they directly rely on source credentials to identify credible news. Participants get their news from familiar traditional or alternative media. They do not trust random news sources whose credibility is not established as such online sources are believed to be involved in spreading fake news.

Message acceptability

Message acceptability was one of the popular methods adopted by participants after source credential. Message content is matched for similarity with different sources. When message content is found consistent across sources then it is accepted as credible.

"But like if I've read something on the front, I tend to also read the same piece of news somewhere else to ensure that you know, everything is aligned and to see if there are any changes in perspective of how the same piece of information has been treated. Because otherwise, it doesn't make sense to me to consume news if it's, it's not facts, if it's biased or if it's leaning in one way or… (GR 2 P4)"

Participants mentioned using multiple source verification to avoid fake news which was their primary concern. It was evident that participants are well aware of online fake news that is prevalent in different forms

"…you can never be too careful on social media. So it's better to rely on multiple sources, rather than just blindly following one of them. That's how the biases are made. You know, that's how you become biased yourself… (GR 2 P6)"

Pennsylvania State University have identified seven broad categories of fake news like polarised content, citizen journalism and misreporting to name a few (Molina, Sundar, Le, & Lee, 2019). Rapid development in technology, absence

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of gatekeeping and information abundance has made online news evaluation process difficult and time consuming. Consequently, participants have mentioned evaluating hard news on a regular basis. This majorly includes politics followed by current affairs, business & technology. They cited investing time in evaluating these news because either it has immediate impact upon them or is of their interest.
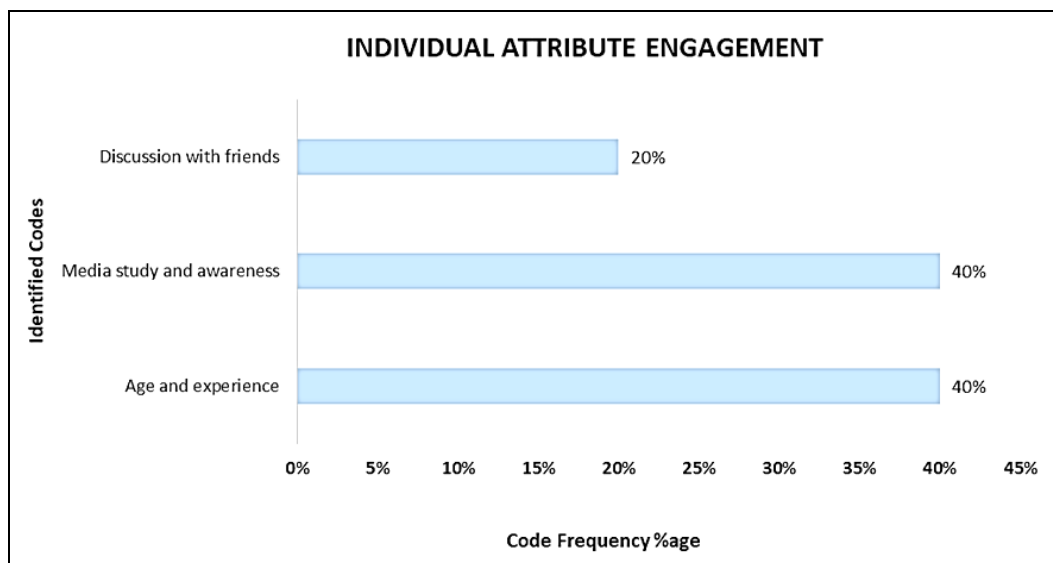
Fig 3: The recurrence of identified codes under the theme Individual Attribute

Age and experience and media study were commonly used by participants which was followed by discussion with friends. Out of the engaged participants, 40% of the participants cited using age and experience, 40% used media study and awareness while 20% engaged in discussion with friends in online news evaluation.

Participants say with age they gain life experience to gauge right from wrong. "I am a grown up and I know the pros and cons. (GR3 P1)".

Their life experience which includes their family, friends, education, work, lifestyle, earning, etc. builds them and it constructs their choices.

"So, basically, I believe that whatever my morals or whatever my principles are, I suppose those things like make me help create an opinion at the end of the day. (GR 1 P4)"

Their values and principles guide them in their choice of news as well. They accept and will accept news that are majorly in alignment with their belief system.

Furthermore, the significance of media study and awareness was cited specifically by participants who were media students. Out of 31 participants, 39% (n=12) of the participants were media students. 25% (n=3) of the media students considered media study very important in learning about news evaluation.

"…when we start studying print media, the first thing we are asked to learn is the five W's and one H, these questions we are supposed to ask about any event or incident… (GR4 P1)"

They cited benefits of media education through which they learned to look for such basic and important cues helpful in evaluating a news story. They mentioned learning to differentiate between facts and opinions, talked about media biases, the commercial side of the industry etc. Media education helped them understand media in and out and not just what is presented to be.

"I'm in a very special position because of my course and what I'm studying that I know about all of this. Common people don't have time neither do they know all about it. (GR 2 P5)"

Individual attribute

One fourth of the participants mentioned using individual attributes for online news evaluation. They were of the opinion that individual attributes shape their world and how they see things around them including news.

The following codes were identified under this theme:

Additionally, discussion with friends was opted by few participants to gain multiple views on the same news story and to avoid looking at a news subjectively with inherent biases.

"If there is an inherent bias, even in small quantities inside us, I think there is inside everybody, whether they acknowledge it or not. And yes, my utmost aim is to not be that way because, you know, we have discussions with friends sitting in college and they also have their own stories, their interpretations. So, we don't want to cross them. And the aim is to be at most the middle and middle most position of a story as you know, as also to validate our own consciousness or conscience. (GR4 P2)"

When evaluating news, participants commonly were trying to make sense. Their evaluation was based primarily on news objectivity. They clearly wanted to avoid any form of biasness by choosing to understand news from varied perspectives. They do not want to be told what to think and want to avoid being controlled by a singular media narrative.

Conclusion

This research studied online news evaluation habits of students in Delhi College and universities. Source credential, message acceptability and individual attributes were identified as the most used methods. Source credential and message acceptability were the most popularly used methods.

Source credential is dominantly linked with source reputation by participants. This heuristic cue has also been identified in many past research. Source reputation, an objective characteristic [30] is identified and applied to decide which news is credible [27]. Majority of the participants did trust random sources for news. Reputed sources were used which included The Wire, The Hindu, NDTV and ANI. They are trusted to bring unbiased and accurate information.

Participants also cited using certain cues found in the news content for evaluation [27]. Message acceptability was also accounted for as much as source credential. Here, participants

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cross checked content for uniformity with different sources to avoid biasness. Sundar [14] identified the importance of news objectivity in evaluating message content. However, participants mostly verified hard news which was of significance to them such as politics, current affairs, business & economy.

Individual attributes were employed by one fourth of the participants to engage with news content. The use of age and experience followed by media study and awareness were cited popularly. With the absence of a standard gatekeeping function, the receiver has to take on the responsibility of a gatekeeper and a source. So, participants use their pre-existing knowledge to readily select credible news, save time Gigerenzer & Goldstein (1996) [31] and to avoid feeling overwhelmed.

Limitations & Future Recommendations

The following limitations were encountered during this research. First of all, social media keeps evolving and changing. Such technological changes have the potential to influence the whole process of online evaluation reported in the research however it cannot be avoided. The research topic of news credibility might have made participants conscious of news evaluation methods they typically employ and they possibly responded favourably. Also, group dynamics might have exerted influence or pressure on participants to accept the dominant ideas and views similar to a real social setup and no interference is required.

Non-probability purposive sampling was used to find students with specific characteristics for the focus group discussion. This qualitative study had a restricted sample and may not be representative of the entire population of students in Delhi. The researcher had constraints of time and economic resources based on which conducive decisions for research were made.

Assessment of online news credibility using cognitive heuristic cues is a complex and vast topic. Future research could include news genres and news formats which also affects credibility and is not particularly explored in this research. Also, multiple heuristic works in coordination for evaluation process, which can be explored for better understanding of heuristic decision making process. Further, the problem of fake news from unknown sources has been identified as a major challenge which could be examined thoroughly to study user engagement with such sources.

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