



Addis Ababa University

College Of Humanities, Language Studies, Journalism

And Communication

School Of Journalism and Communication

**Awareness of AAU students on personalized online news: In terms of
credibility and diversity of news sources**

BY

Felmata Mahammed Zeko

**A Research Submitted to Graduate School of Journalism and
Communication in Partial Fulfilment of the Requirements for the Degree
of Master of Arts in Journalism and Communication (Multimedia)**

Supervisor:

Teshager Shiferaw, (PhD)

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DECLARATION

I, the undersigned, declare that this study is my original work. Every source of materials utilized for the thesis has been dully acknowledged.

Name: Felmata Mahammed Zeko

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APPROVAL

This is to certify that the thesis submitted by Felmata Mahammed Zeko entitled “Awareness of AAU students on personalized online news: In terms of credibility and diversity of news sources” ‘in partial fulfillment of the requirements for the award of a Master ‘s Degree in Journalism and Communication. complies with the regulations of the university and meets the accepted standards with respect to originality and quality.

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LIST OF ACRONYMS

AAiT: Addis Ababa Institute of Technology

AAU: Addis Ababa University

BBC: British Broadcasting Corporate

CHLSJ: College of Humanities, Language Studies Journalism & Communication

CLGS: College of Law and Governance Studies

CMT: Centre for Media Transition

CNS: College of Natural & Computational Sciences

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ABSTRACT

People are becoming increasingly reliant on online systems that employ algorithmic curation to organize, select and present information. In the age of digitalization life is full of algorithmically recommended news content such as news feeds, recommendations and personalizing content recommend. These algorithmically personalization of contents has potential to influence users' news consumption behaviors, but users are unaware of their presence. This study explored the awareness of AAU students on personalized online media news in terms of credibility, content, and source diversity. The specific objectives of the study are to understand awareness of AAU students on the way social media collect user data to personalize news and prioritize contents, to assess how students judge the credibility of news sources that are recommended automatically on their social media feeds and to assess awareness of AAU students on to what extent they access diverse news content and sources in personalized online media. To achieve these objectives, a mixed research design was employed combining quantitative and qualitative methods to provide a comprehensive understanding of the research problem. Also, the study employed a convergent mixed method design, collecting and analyzing both types of data simultaneously. To address the objectives 282 sample sizes of participant surveyed questioners were drawn from total population study selected from various departments and academic years at AAU. Purposive sampling is utilized to select specific participants for this research from field of studies given for regular undergraduates, stratified sampling techniques was also employed to draw proportional sample size from participant selected using purposive sample by dividing them based on field of study and study years and to different strata and the final participants of the study selected using simple random sampling technique. Moreover, in depth interview with set of 8 participants. Key findings from the research revealed that while students were generally aware of social media algorithms tracking user activities, they lacked detailed knowledge of the specific types of user data collected for personalizing content. Participants used automatically recommended new using algorithm, with varying levels of reliance on personalized news content. The study highlighted the importance of understanding diverse perspectives and information-seeking behaviors among students from different academic backgrounds in personalized news environment.

Keywords: Social media algorithm, Personalization, Filter Bubble, Echo chamber, News Feeds, Credibility, News Source Diversity

CHAPTER ONE

1. Introduction

1.1. Background of the Study

The digitalization of media organization and the development of online platforms have changed how news is produced, distributed and consumed Nielsen et al. (2016, p. 8). Thus, Traditional media outlets are no longer the sole providers of information, due to social media and online news platforms have gained popularity. The report of the CMT (2018, p. 11) refers that several factors, including the accessibility, immediacy of online information, and the democratization of content creation through social media, have driven this transformation. They offer everyone the ability to produce and publish information at anytime from anywhere, which creates an overwhelming flood of information with around 900,000 blog posts, 50 million tweets, more than 60 million Facebook status updates, and 210 billion e-mails are sent off into the electronic every day, which is hard to see all (Pariser, 2011, p. 11). Still, the number of social media platforms is increasing, and the number of users is doubling, which makes it easy to see how content published on social media is increasing. According to Bagadiya (2024) around 360,000 videos are uploaded on YouTube, over 1 billion stories get published on Fakebook, and 500 million tweets are sent daily on X, making it difficult to see all the content. In such environment of overwhelming information, social media use algorithm to personalize contents for users by making their engagement more relevant and automatically suggest contents which are related to their interest at the individual level (Eg et al., 2023).

Personalization is constructed by algorithms that originated from users' online behaviors, such as search terms, engagement with contents, interaction with social media friends, and demographic information (Pariser, 2011, p. 10). An algorithm is referring to a set of instructions or rules designed to solve a specific problem or perform a specific task (Stein, 2009). The algorithm social media platforms applying are based on the profile of users and by tracking user activities, personalize contents and recommend content that aligns with preexisting beliefs and preferences (Powers, 2017). While this approach promises enhanced user engagement and relevance, it raises profound questions about credibility and diversity of the news consumed. Also, it raises concerns about the potential reinforcement of preexisting beliefs and the creation of echo chambers that limit exposure to diverse perspectives (Pariser,

2011, p. 11). Additionally, the proliferation of misinformation and the blurring of lines between fact and opinion further complicate the media landscape.

According to Kalogeropoulos (2019), youngsters under 25 are the most consumers of personalized news content providers' social media platforms. Particularly more than any other part of society, college students are vulnerable to social media platforms. This can be attributed to different exposure and availability of Wi-Fi connections. Different studies show that online media personalizing their content has advantages for users in receiving relevant information. However, they have also many negative consequences for social media content consumers. The report of Reuters Institute Digital News Report (2023) indicates that, online media users prefer automatically content suggested by social media algorithm comparing to human editors. This preference is generated from the expectation that content personalization enhance relevancy of social media contents and reduce toxicity and increase diversity of sources, but “despite these expectation, social media companies competing for attention and advertising continue to optimize for engagement, with less attention to increasing quality, reliability, and diversity”. Similarly, the empirical data conducted on “college students’ awareness and perceptions of algorithm-driven platform” by Head (2020, p. 18) stated that “personalization effects, had trapped student in a narrow space of confirming and reinforcing beliefs”.

In Ethiopia media landscape, the main stream medias mostly known by the intensified entification process in the Ethiopian media discourse which create ethnic based polarization (Skjerdal & Mulatu, 20220). Even though the government expand media freedom in 2018 most of private media dangerously divided along their specific ethnic group rather than representing general public. In the case of public media due to most of them are under government control they are failing to cover objective stories rather than being mouthpiece of government. Regarding digital media in Ethiopia with increasing internet connectivity and smartphone penetration, more people now have access to online media platforms. According to Internetworldstats.com (2022), among country 119,748,379 total population, 21,147,255 (17.7%) are Internet users. There are around 6.5 million active social media users in Ethiopia; this was increased from 1.56 million of social media users in 2014 (Galal, 2024). This has led to the rise of social media as a popular medium for information dissemination and communication. However, the increasing in penetration of internet in Ethiopia has not been without challenge. Since 2018 ethnic-based media such as the Oromo Media Network, Tigray Media House (TMH) and Amhara-affiliated media outlet called ‘Asrat’ have led to filter

bubbles, echo chambers and the polarization of conversations on social media and polarized digital citizens.

According to Alazie and Ebabye (2019) there is significant lack of digital literacy in Ethiopia and other developing African nations. Which clearly show that potentially fake news and misinformation has become a concern on social media platforms in Ethiopia. The Factors contributes to low level of digital literacy among Ethiopian social media users are demographic background, digital media exposure and socio-economic status (Atinafu, 2022). The impact of social media algorithm on Ethiopian social media users are also numerous. Ethiopian social media users, like users worldwide, are affected by the filter bubble due to algorithmic personalization, limited exposure to diverse perspective and a more balanced and informed online experience.

Furthermore, there are money factors contributes to social media personalization of contents for Ethiopian users which put them in preexisting belief and narrow environment. Among the factors, Ethnic based conflict specially among university students and civil war in the country are the major factors. In this case social media particularly, Facebook played lion share (Muna & Fabio, 2022). According to the report of Amnesty (2023) Facebook algorithm prioritize and recommend hateful speech during northern Ethiopian civil war. Thus, Ethiopian social media users are also vulnerable for impacts of social media algorithm due to nature political structure and people group themselves to specific ethnic group.

1.2. Statement of the Problem

In the environment of information overload, social media are tracking users and automatically personalizing content for individuals based on their pervious interaction and activities, all in a bid to deliver what is perceived as most pertinent to each individual's user. While automatic news selection has its benefits, there are concerns about credibility and source diversity among scholars. Several studies show that most people are unaware of how social media platforms record their profile and past interactions, and based on that interaction, social media recommend content which are similar to their past activities, which can impact users' online news conception pattern (Powers, 2017).

Awareness of how social media automation contents and digital media literacy are vital. In the digital platforms, "Misinformation, disinformation, fake news and hate speech thrive in Ethiopia, strongly correlating with real world reactions that exacerbate conflicts and violence initiated by several distressing factors" (IMS, 2021). In such conditions, accessing credible

information becomes a barrier. Fojo-IMS (2021) argue that media literacy could be the first step for it, including it in the part of the education curriculum. In this case, Ethiopia is one of the countries where media literacy and digital skills are lacking. compared to the general public, Students are particularly susceptible to high internet problematic use (Mengistu et al., 2021). This issue intertwines with broader concerns surrounding algorithm-driven platforms, as both students and faculty harbor apprehensions about privacy and the reliability of news and information (Head et al., 2020, p. 3).

A study conducted by Atinafu (2021) examined the social media literacy of higher education students in Ethiopia, revealing a notable deficiency in their proficiency. This deficiency in digital platform literacy impedes students' effective utilization of social media platforms, potentially exacerbating challenges in regions such as Ethiopia characterized by prevalent ethnic conflicts (Alazie & Ebabye, 2019). Also, Abebe (2020) highlights the role of fake news and hate speech propagated by social media activists in sparking ethnic conflicts, particularly among higher institution students, underscoring the challenge of accessing diverse and truthful information sources. Recently Ethnic tensions and violence have surged in Ethiopia, with politicians and activists emerging as key instigators of these conflicts. To rally support for their causes, they exploit social media platforms (Shifa & Pabón, 2022). This utilization of social media has transformed it into a powerful tool for extremists and ethno-nationalists, enabling the dissemination of hate speech, misinformation, and propaganda that exacerbates existing divisions within society.

Meta, the company which is the Facebook family, has faced allegations from Amnesty International regarding its complicity in prioritizing hateful content and violating the human rights of the Tigran ethnic group (Amnesty, 2023). Czerep (2019) research on "Social media dynamics as a new factor in African politics" underscores how the creation of filter bubbles on social media contributes to ethnic tensions by reinforcing divergent narratives among different ethnic groups, both indigenous and newcomers.

Regarding the impact of social media personalization, few local studies have investigated issues related to the impact of social media polarization on consuming credible and diverse content and sources. For instance, Gagliardone et al. (2015) conducted study on Preliminary Assessment of Online Debates in Ethiopia stated that polarization of social media specifically Facebook divided opinions of Ethiopians and diaspora rather than aggravating on existing issues in Ethiopia politics. However, the study was limited to Facebook only.

Another study conducted by Workneh (2021) “Social media, protest, & outrage communication in Ethiopia: toward fractured publics or pluralistic polity?”. It is the study on the role of social media during Ethiopian 2018 political reform which revealed both positive and negative side social media. According to the study finding, while social media platforms offered avenues for participation and engagement for Ethiopian youth, there are indicators that these opportunities also led to concerns. One such concern is the emergence of outrage communication, characterized by inflammatory language, hate speech, and the propagation of extreme political views. This study was event based which focus on Ethiopian political reform during 2018.

Moreover, Frances Haugen, a former data scientist at Facebook, accused the company of fueling ethnic violence in Ethiopia through its algorithmic processes (Hale, 2021). As this report is only news article it lacks empirical evidence.

As highlighted by Belay (et al., 2020) In Ethiopia, the polarization of mainstream media is a significant factor contributing to the polarization observed in social media platforms. Moreover, according to Internews (2023, p. 30), investigation on “Ethiopian Digital Media Information Ecosystem Assessment” in 2023, the prevalence of fake information on digital platforms is alarmingly high, with 96.3% of assessment participants reporting exposure to misinformation. This proliferation of fake information further exacerbates the polarization of online discourse, creating an environment where divergent viewpoints are often distorted or misrepresented. Furthermore, Computational Propaganda which is known as digital tools of political manipulation, instead of fulfilling its promise of democratizing information, is now being used by various entities to spread political propaganda and undermine democratic values, particularly through the use of computational tools like algorithms, surveillance, and automated accounts in Ethiopia (Mekonnen, 2020). This study mainly focusses on related literature review, while it lacks first and information from online media users.

All above mentioned studies (except news article of npr.org, and report of Internews) focus on how social media algorithm personalization of contents create ethnic base polarization (study by Gagliardone and Workneh) and research done on how social media algorithm affect democratic system during election campaign (study done by Mekonnen) and invastigation conducted on how polarization of ethiopian medias contributed to social media too (Belay) without giving primary focus on awareness social media users have on how social media personalize contents, effects social media personalization’s have on judging credible of news and accessing diverse contents and sources. Thus, this study intended to investigate awareness

AAU student on personalized online news in terms of credibility and news sources and content diversity.

There are also various studies conducted in other countries on social media news personalization impacts on user news consumption. Among them, few of them are (Jürgens & Stark 2022) investigated “The Divergent Effects of Algorithmic Curation on News Consumption”, Zimmer et al. (2019) studied “echo chambers and filter bubbles of fake news in social media: man-made or produced by algorithms?”. The other study conducted on credibility of online news by Alrubaian et al. (2019) on “Credibility in Online Social Networks” and research done by Westerman et al. (2012) on “A social network as information: The effect of system generated reports of connectedness on credibility on Twitter” are few of them. Most of the study conducted in the domain of impact of personalization and automatic recommendation on users’ news consumption mainly focused on Western contexts, sometimes overlooking the socio-cultural, political, and economic elements that could impact news consumption and perception habits of consumers in other areas of the world. As far as researcher knowledge is concerned there is no locally study conducted on awareness of Ethiopian social media users have on personalized online news contents in terms of credibility and news source and contents diversity

Therefore, even though numerous studies have been conducted on social media automatic news recommendation, there remains a substantial gap in understanding how Ethiopian social media users, in particular, view algorithmically recommended news pieces regarding credibility and content diversity which is significant in controlling impact of algorithm on social media users in Ethiopia. Thus, this study proposed to fill the gap above study failed to address.

1.3. General Objective of the Study

The main objective of this thesis is to assess the awareness of AAU students on personalized online news, focusing on their understanding of content personalization practices, their views on credibility and engagement with diverse perspectives.

1.3.1 Specific objectives

The following are the specific objectives of the research:

- ✓ To assess the level of awareness among AAU students regarding social media platforms' collection and use of user data to personalize content and determine priority in their news feeds

- ✓ To understand what AAU students, perceive when they experience news related to their previous consumption on their news feeds.
- ✓ To assess how Addis Ababa University students judge the credibility of news sources that are recommended automatically on their social media feeds.
- ✓ To assess awareness of AAU students on to what extent they access diverse news content and sources in personalized online media.

1.4. Research Questions:

The study intended to answer the following research questions:

1. What is the level of awareness among AAU students regarding social media platforms' user data collection and use of user data to personalize content and determine priority in their news feeds?
2. What do AAU students perceive when they see content related to their pervious activities on their news feeds?
3. How do Addis Ababa University students judge the credibility of news sources that are recommended automatically on their social media news sources?
4. To what extent do AAU students seek out diverse perspectives and viewpoints in personalized online news sources?

1.5. Significance of the Study

The results of this provide important implications for upgrading academic curriculum linked to media literacy, with a special focus on social media education. In addition, it is vital for social media users to know the strategies utilized by these platforms to gather their activity data and modify the contents they consume. This insight helps people to effectively negotiate the influence of algorithmic news selection. Moreover, the finding of study helpful in eliminating ethnic conflict in Ethiopia and to create harmony among them. Furthermore, this research contains the potential to inspire and advise other academics in Ethiopia and beyond, pushing them to pursue novel solutions in their own investigations.

1.6. Limitation of the Study

This study has several limitations that should be considered. Due to financial constraints, this study focuses on regular undergraduate students at AAU, which may limit the generalizability of the findings to the broader population of university students in Ethiopia. As AAU is located

in the capital city and draws students nationally, the awareness, access to technology, and exposure to online news sources may not represent students attending universities in other parts of Ethiopia.

In addition, this study focused on Facebook, YouTube, TikTok, Google, and other social media who utilize algorithm in personalizing contents. regarding this it is more manageable if the specific social media is in focus. Moreover, despite the rich data obtained, there was a time lag between data collection of both qualitative and quantitative data. During the intervening period, participants have been exposed to the survey questionnaires, potentially leading them to form assumptions or preconceptions about the interview questions. Consequently, the researcher suspects their responses during the interview have been lacked spontaneity, introducing potential bias into the qualitative data.

Additionally, the proposal does not cover the impact of cultural and societal factors on the awareness of personalized online news among Ethiopian social media users.

Furthermore, as an exploratory study on a relatively new phenomenon, this research relied heavily on student self-reports about their perceptions, attitudes, and behaviors related to online news consumption. Self-reports can be biased or limited in accuracy.

1. 7 Scope of the Study

The primary objective of this research is to explore the awareness of AAU students about personalized online news in terms of credibility, content, and source diversity. This study focuses on regular undergraduate students at AAU. Concerning the topic under investigation, the target population was selected based on their knowledge of the study area. Accordingly, students from the Department of Broadcast Journalism and Multimedia Journalism were included, considering their media literacy. Additionally, students from the Department of Computer Science and the Department of Software Engineering were incorporated, assuming they have a background in understanding of the algorithms used by social media platforms to personalize content. Furthermore, to observe the differences in student awareness across disciplines, the study included Law students who are not exposed to media literacy or an understanding of how algorithms work.

The study aims to gather data from students across three academic years (second, third, and fourth-year students) in each of the selected departments. This approach ensures a more

representative sample and mitigates potential biases encountered from the disproportionate representation of a single department or academic year.

1.8. Operational Definition of Terms

Personalized news refers to a way social media platform selects and suggest news content tailored to the individual interests, preferences, and behavior patterns of each user on their news feed or home page.

Algorithm is a set of instructions or rules followed by social media platforms to analyze user data (such as browsing history, interests, location, etc.) and personalize the selection, ordering, and display of online news content uniquely for each user based on their predicted preferences and interests.

credibility refers to the perception of trustworthiness that an audience attributes to automatically recommended social media news on their news feed.

Diversity It refers to the availability and representation of diverse sources, perspectives, and opinions, in the news content that individuals consume in their social media news feed.

Online media are digital content distributer via internet, using algorithms for automatic suggestions.

CHAPTER TWO

2. REVIEW OF RELATED LITERATURES

This chapter aims to provide an in-depth look on related studies on personalized online news, explicitly focusing on conceptual, empirical, and theoretical aspects including conceptual framework.

2.1. Concepts of Algorithm and News Personalization

An algorithm can be defined as a set of instructions or rules designed to solve a specific problem or perform a particular task (Stein, 2009). Algorithms are used in various applications, such as navigation systems, search engines, and online music streaming services (Galkina & Grishan, 2021). They are essential for any computer program and are the primary catalyst for numerous systems and applications. An algorithm can be employed for multiple applications. Digital media is one of the application areas of algorithms. Social media Algorithms are collections of rules, signals, and data that control the operation of social media sites (Smailovic et al., 2018). These algorithms determine how the material is scrutinized, ranked, chosen and suggested to users. Algorithms influence users' decisions and what they see on social media platforms.

Personalized online news refers to the use of algorithms and machine-learning techniques to tailor news content to individual users based on their preferences, interests, and past browsing behavior (Pariser, 2011, p. 66; Tran et al., 2023). With these activities, online platforms can recommend content that aligns with preexisting beliefs and preferences (Powers, 2017). This customization aims to enhance user engagement and satisfaction by presenting news articles that are relevant and appealing to each individual. Personalized news platforms achieve this by tracking user activity, collecting data on their clicks, likes, shares, and search history, and using this information to create personalized news feeds (Wang et al., 2022).

This automated recommendation influences the choices we make. "Recommendation engines at Amazon and YouTube affect an automated familiarity, gently suggesting offerings they think we will like. Nevertheless, do not discount the significance of that "perhaps" The economic, political, and cultural agendas behind their suggestions are hard to unravel" (Pasquale, 2015). They generate personalized advertisements, news stories, and information for these companies to derive maximum profit by having users stay "engaged" on their platforms.

Social media algorithms are helpful in the endless sea of online information by curating stories matching individual interests on issues they want to engage in (Thurman et al., 2019). However, different scholars argue that social media news personalization systems, besides their advantages, can potentially introduce many negative consequences. Among the opposing sides of social media algorithms is creating a filter bubble in which users are isolated and trapped in identical ideas of their own and limited exposure to diverse viewpoints (Cinelli et al., 2021). These negative side algorithms lead to Misinformation Propagation. According to a BBC report (2023), Facebook's algorithms intensified the spread of hate speech during the Tigray conflict in Ethiopia. The report stated that Amnesty International accused Facebook of contributing to violence during the Ethiopian northern conflict. Meta, Facebook's parent company, earlier denied similar accusations, and Facebook has faced previous allegations of disseminating messages promoting incitement against the ethnic group of Tigrayans, and this is not the initial occurrence.

2.2. Background of Social Media Algorithm

Social media sites have a crucial influence in determining the content we consume and the material we view (Calice et al., 2021). The application of algorithms in social media platforms is a recent phenomenon. Before two decades, most people assumed they would get the same result when they googled the same term (Pariser, 2011). However, since December 2009, this will no longer work. Now, the consumer sees what the Google algorithm recommends as essential (Pariser, 2011). The use of algorithms in social media began in the early 2000s when social media platforms grew in popularity. Initially, social media platforms displayed content chronologically, with the most recent posts appearing at the top of the feed. However, as the number of users and posts increased, it became difficult for users to keep up with all the content on their feeds. To address this issue, social media platforms began to use algorithms to personalize content for each user. They are applying content personalizer algorithms to make their service more attractive at an individual level (Aydin, 2018). Even it becoming "Personalization is a core strategy for the top five sites on the Internet—Yahoo, Google, Facebook, YouTube, and Microsoft Live—as well as countless others" (Parisers, 2011, p. 8). They significantly impact how users plan and lead their lives, as they govern the circulation of information and shape how we communicate on the internet (Bozdag, 2013).

2.3. Overview of Ethiopian Social Media Landscape

The Ethiopian digital media landscape has rapidly evolved, propelled by a surge in internet and mobile phone usage across the nation. This momentum is underscored by the fact that Ethiopia experienced the second-largest relative growth of social media globally in 2018 (Christer & Solomon, 2019). According to the report of Internet world Stats (2020), Ethiopia boasted over 21 million internet users, marking a notable 19% internet penetration rate. As technology advanced, the country saw significant progress in the adoption of 4G and 5G networks, soaring from 24% and 0.2% in 2022 to 58% and 9% in 2023, respectively (GSMA, 2023). Among Ethiopian social media users, youth parts of society are the most users of social media (Napoleoncat, 2022). Within this digital landscape, the Ethiopian diaspora community emerges as a pivotal force, leveraging the internet predominantly to engage in discussions concerning the economic and political affairs of the nation (Hafkin, 2006).

Digital journalism has emerged with the rise of press freedom following political changes in Ethiopia (Internews, 2023). Internews's report added that despite these advancements, the country's digital media ecosystem has failed to deal with the controversy of reconciling digital activism and journalism. This problem was evident in the digital dilemma confronted by the new media law. The new Ethiopian media proclamation tries to handle this problem by acknowledging and registering online media outlets only if they have organizational systems and editorial operations (Tadeg & Shiferaw, 2020, cited in Internews, 2023).

In the penetration of social media usage the country have 6.8 million user in 2023 (Internews, 2023). In the preferences of social media platforms Facebook, Telegram, and YouTube to be the three most preferred social media outlets in the country (Internews, 2023). TikTok (13.3%) and Instagram (7.5%) grabbed the fourth and fifth rankings, respectively. Interestingly, Twitter (0.7%) was the least preferred social media network coupled with IMO (1.2%), and LinkedIn (1.2%), which were positioned in the far end of the continuum in the audiences' choices.

2.2.1. The Impact of Social Media Algorithms on News Consumption Among University Students in Ethiopia

Social media platforms like Facebook, Twitter, and Instagram have become major sources of news for university students in Ethiopia and around the world. However, the algorithms that curate the content on these platforms can significantly influence what news stories students are exposed to (Bakshy et al., 2015).

Several studies have found that social media algorithms tend to reinforce users' existing beliefs and biases by prioritizing content aligned with their previously exhibited preferences (Flaxman et al., 2016). This "filter bubble" effect means students may be disproportionately exposed to polarizing viewpoints and less likely to encounter ideologically cross-cutting perspectives (Nguyen et al., 2014).

Moreover, social media algorithms prioritize engaging and provocative content, which can lead to the spread of misinformation, conspiracy theories, and sensationalism (Vosoughi et al., 2018). Monetization pressures incentivize engagement over factuality (Leider et al., 2020).

However, some research indicates students can be discerning news consumers who fact-check across multiple sources (Flintham et al., 2018).

literature suggests social media recommendation engines can narrow Ethiopia's university students' news diets in problematic ways, contributing to political polarization, misinformation diffusion, and social fragmentation (Woolley & Howard, 2017). However, students' media literacy is also documented as a potential counterweight.

2.3. Importance of Social Media Algorithm in News Personalization

In a digitally interconnected world, where information is continuously being generated and disseminated within a fraction of a second from each corner of the world, it can be challenging for individuals to find the content of their interest through the vast amount of available news and content (Song et al., 2017; Renjith, 2018). In an overwhelming information environment of digital media, news personalization is crucial in helping individuals cope with the excessive content available (Song et al., 2017). Social media Algorithms collect and analyze user data's, such as, browsing history, search queries, social media activity, and demographic information. Based on these data points, the algorithms create user profiles and identify patterns and similarities among users (Wang et al., 2020). These patterns and similarities are then used to develop personalized news recommendations for each user.

There are worries about how algorithmic systems can effectively propose suitable information to new users with no online experience, as these systems rely on users' online activity and browser history. Asefa (2017) introduced a hybrid recommender system to overcome algorithmic news recommendation constraints. This approach integrates content-based and collaborative filtering techniques with user demographic data to effectively address the cold start problem for new users. The system categorizes individuals according to their demographic

information and combines their past activities with a social network structure to offer personalized suggestions to new users.

2.4. Importance Of Diversity in News Sources and Contents

Diversity of news and sources has been referred to as a fundamental principle of news quality, which guides the building of a well-informed. The diversity of news sources is crucial in fostering a well-informed society (Vrijenhoek et al., 2012). The news is count to fare and balance when fulfilled news sources from diverse angel, information and perspective. of news can include a diversity of sources, content, and perspective. Access to diverse news sources exposes individuals to various perspectives, opinions, and narratives. This exposure helps broaden their understanding of complex issues, challenges preconceived notions and encourages critical thinking.

2.5. Impact Of News Personalization on News Diversity

The world we live in today is characterized by information overload and easy access to a wide range of news sources. This excessive availability of news sources is both an opportunity and an inconvenience. On one side, it enables users to receive news and information from diverse viewpoints, enabling a more comprehensive grasp of worldwide events (Humprecht & Büchel, 2013). On the other side, it also presents the risk of individuals being exposed to echo chambers, only consuming news that aligns with their existing beliefs and biases, thus limiting their exposure to different viewpoints (Auxier & Vitak, 2019). Social media employs an algorithm to personalize content to individual interests in an environment of overwhelming information to attract user engagement with their platforms. However, it creates the risk of affecting diversity, which may cause information blindness in consumers (Pasquale 2015, p. 88). This has led scholars to question whether algorithmic methods on digital platforms value and foster diversity as a critical feature of news quality (Pasquale 2015, p. 88) These algorithms have a profound influence on shaping the information landscape and the way individuals perceive and engage with news (Auxier & Vitak, 2019). By curating news content to each individual user, social media algorithms have the power to create echo chambers and filter bubbles, where individuals are only exposed to information that aligns with their existing beliefs and opinions (Wang, 2022). This can lead to a fragmented and polarized society, where people are less likely to encounter diverse perspectives and engage in critical thinking. This can further lead to a polarization of viewpoints and the spread of misinformation. The filter

bubble created by news personalization also has a profound impact on the development of democracy by stopping people from having all the information to make mindful decisions in democratic activities (Senter, 2019, p. 16).

The system social media use to personalize news story to individual level interests lack in diversity, content moderation, and fairness (Wu et al., 2023). Bartlett (2018, P. 44)) on his book “How internet is killing democracy and how we save it” explains how digital media user data is recorded and used for election campaigns. The book presents the 2016 US presidential election as an example, when Donald Trump leveraged digital media users’ data to send targeted info to people. The impacts of automatic recommendation of digital media content, one is the effects on user understanding of individual autonomy and identity (Onitui, 2021).

Besides several scholar studies conducted on impact of social media automatic news recommendation on diversity of news sources and contents user consume, there are also studies shows no significant impact on diversity of contents. The study of Haim et al. (2017) conducted on “Effects of personalization on the diversity of Google News” found that no support for the echo chamber except small effects of personalization on content diversity. similarly study conducted by Skjerdal & Gebru (2020) on article entitled “Not quite an echo chamber: ethnic debate on Ethiopian Facebook pages during times of unrest|” they have discovered echo chamber effect was not detected instead diversity viewpoint was represented.

2.6. Digital Media Literacy

Digital media literacy refers to the ability to access, understand, evaluate, produce, and act using all types of digital communication. It involves the skill set required to critically assess media messages, develop content, and connect securely and appropriately across digital channels (Hobbs, 2010). As the digital landscape evolves, digital literacy encompasses technical skills and abilities to understand digital technology to engage with technology for work, to find information effectively and to identify misinformation from credible (Meyers et al., 2013).

With the exponential growth of digital media, individuals need digital literacy to navigate the online information ecosystem (Fernandez-Villavicencio, 2010). The expansion of social networking platforms, user-generated content, and the 24-hour internet news cycle have created an overflow of unfiltered information with different reliability (Liu et al., 2021). Thus, digital

literacy empowers individuals to consume media judiciously, manage personal data privacy, and participate constructively in digital spaces.

2.6.1. Relationship Between Digital Literacy and Online News Consumption

Digital literacy plays a vital role in online news consumption due to the unique characteristics of the digital news ecosystem. The low barriers to publishing and spreading information online have enabled the production and circulation of "information pollution", such as misinformation, disinformation propaganda, clickbait, and fake news (Tandoc et al., 2018). This necessitates digital literacy skills such as the ability to evaluate the credibility of news sources by checking for evidence, biased language, misrepresented data or quotes taken out of context (Jones-Jang et al., 2021). Studies have yet to explore the state of digital literacy in Ethiopia. A study conducted by Atinafu (2021) on the digital literacy of higher institution students shows that there is poor digital literacy among students. Atinafu's study shows that more work is required to increase digital literacy among social media users, specifically young people.

2.6.2. Users' Awareness on Algorithmic Personalization of News and Information

With the increasing number of personalized media platforms, having a basic awareness of what algorithms are and do has become an indispensable element of news literacy Head et al. (2020). These issues are mostly significant for social media platform users under the age of 25 years because they rely on social media for news and entertainment, and algorithmic automatically recommended processes increasingly affect the way in which they access news (Kalogeropoulos, 2019). Thus, the system of personalization supports users in limiting information overload and providing relevant news stories to individual interests; by nature, these structures also limit user self-decision, making automated decisions on what information to priorities. Which invite users to stay in pre-exist belief. Understanding about media production process helps users to judge processes of editorial gatekeeping critically, understandings of algorithmic personalization are vital for users to logically explore the completeness and balance of the news they encounter on their news feed (Powers, 2017). It is remarkable how little emphasis many media literacy programs have on content customization, even in light of the growing effect of algorithms on the information that reaches youth. Academic courses, gave much emphasis on teaching students how to judge news credibility, not on how platforms and technologies may affect such content (Mihailidis, 2018). Moreover, due to the commercial nature of most social media platforms, algorithms' selection mechanisms

are not transparent. This has sparked a number of mainly US-centric studies about users' awareness of and knowledge about how algorithms mediate the content they encounter. Rader & Gray, (2015) study the conduct on "Understanding User Beliefs About Algorithmic Curation in the Facebook News Feed" found that almost one-third of Facebook users were aware that their news feed would not show all posts of the friends and pages they followed, a similar study by Eslami et al. (2015) found that only 37% of respondents were aware of Facebook's News Feed personalization. Investigating users' manual interventions in algorithmic news selection is also inconclusive. In this case, Gruber and Hargittai (2023) concluded that almost 40% of their survey respondents actively curated their information environment. However, in reverse, Powers (2017) found that most college students he chose as the study sample did not court their information for themselves due to, they did not know how to manually customize their social media feed on Google News or Facebook.

Gran et al. (2020) found significant associations between algorithmic awareness and both users' level of education and gender. The level of education also predicts algorithmic knowledge and has a negative association with age (Reisdorf & Cotter, 2020).

2.7. Overview Of Media Credibility

The question of the media source's trustworthiness has gained significance in recent years due to the widespread dissemination of genuine information and misinformation through online media platforms facilitated by the expansion of digital media. A credible person or source is one that an audience views as knowledgeable, competent, and honest regarding a given topic (Metzger, 2007). This perception leads the audience to put greater weight on the claims and opinions shared by those with higher credibility. Scholars defined credibility as the feature that makes one message of high quality related to a similar message which is of low quality (Oyededeji, 2010). Being credible is crucial for media. When audiences rely more on specific media outlet or channels to consume news and information, they are indeed to rate the channel as more credible than others (Kiousis, 2001).

Several aspects can limit the credibility of media articles such as, reputation and reliability of the media outlet or websites, the competence and experience of the media professionals or writers, the reliability and accuracy of the information provided, the openness of sources and techniques used, and the presence of biases or sensationalism. Additionally, variables such as the website's design and user interface, the presence of clear editorial rules and practices, and the level of engagement and contact with users can also affect the perceived credibility of

online news sources (Hammouchi & Ghogho, 2022). Also outcome that caused bias in mainstream news selection still works in news selection in online media (Bozdag, 2013). These mixed findings can partially be explained by the demographic diversity in user samples studied. Gran et al. (2020) found significant associations between algorithmic awareness and both users' level of education and gender. Algorithmic knowledge is also predicted by the level of education and has a negative association with age (Cotter & Reisdorf, 2020).

2.8. Theoretical Review

2.8.1. Folk Theories of Algorithms

Nowadays, social media are complex platforms that use algorithms to prioritize content and present it to users. How the algorithm works is opaque to the user; even the developer does not know how exactly it operates (Burgin, 2001). Due to that, most social media users understand social media algorithms poorly (Eslami et al., 2015). social media users mostly learn how social media collect their data and filter the contents they consume through experience they construct in the long time engagements (Klawitter & Hargittai, 2018). How people make sense of algorithms guides their self-presentation tactics (Devito et al., 2018). The more users use social media platforms they have more opportunity to understand how they filter and personalized contents for them. Arne and Moe (2021) Their study on how users perceive social media algorithms identified five types of folk theories of algorithms: 1. Algorithms are confining: narrow worldviews and create echo chambers; 2. Practical, which prioritizes and filters relevant information; 3. Reductive, 4. intangible: opaque, suspicious power, 5. exploitative: Harvest user data for commercial gain.

2.8.2. Theory of Filter Bubble

The filter bubble theory proposes that websites and search engines create increasingly personalized experiences for internet users based on their past clicks, searches, and preferences. This creates a "filter bubble" around users, exposing them mainly to information aligned with their beliefs and interests. Social media creates a filter bubble, which is an obstacle to an opportunity to learn new things (Pariser, 2011, p. 15). According to the theory of filter bubble articulated by internet activist Pariser, (2011) Filter bubbles narrow users' perspectives and isolate them in ideological, cultural, and political echo chambers or bubbles. This can polarize discourse, foster confirmation bias, and expose users to less diverse ideas and content. There is debate among scholars whether filter bubbles exist or not. According to DiFranzo and Gloria-Garcia (2017) on the study of "Filter bubbles and fake news" they did on UK Brexit in 2016

and US presidential election they found that social media blamed for creating filter bubble and spread fake news to influence voters. Nowadays, social media algorithms are used in African election campaigns to create filter bubbles (Ndlela, 2020). Overall to identify whether filter bubble exist or not is yet need further study and clear definition (Michiels et al., 2022). nevertheless, the theory raises important ethical questions around the power and responsibilities of personalization algorithms, and ongoing research explores filter bubbles' potential influences on things like ideological extremism and the fragmentation of shared civic discourse (Pariser, 2011, p. 4).

2.9. Empirical Review

2.9.1. User Perceptions of Social Media Algorithm and News Personalization

Having awareness on how social media algorithmic curation news contents has significant role for consciously access today's increasingly personalized social media platform (Head et al., 2020). There are several studies conducted on what users perceive about social media algorithm and how it is shaping their news consumption pattern. In a research conducted in one of the most digitalized societies of Norwegian by Gran et al. (2020) on "To be or not to be algorithm aware" refers that , 61% of the Norwegian population having no or low awareness of algorithms. Eslami et al. (2015) on their study on 40 Facebook user found that more than half of their participants do not aware news feed automatic recommendation. Other study conducted by Elahi et al. (2022) on "Towards responsible media recommendation" found that, the advantages of recommender systems, such as personalized systems, may also lead to undesired effects on individuals, communities, or society as a whole. Other study conducted by Aydin, (2018) on consumer attitude toward Facebook ads, refer that most of participants of the study have unfavorable attitude toward Facebook ads.

According to Powers (2017) on the study he did on "awareness of news personalization among college students" his finding conclude that 60% of the study participants were not aware of how their news feeds are news personalized, and only 14% reported being very aware of it. Yeung (2017) found that social media algorithm shape users world of view in polarized world put them in filter bubble. (Kitchens, et al, 2020) presented the result of study they did on "the impact of social media on diversification and partisan shifts in news consumption" which show that it's not social media which narrow users view world rather it's how user consume.

According to research on algorithm knowledge gap by (Reisdorf & Cotter, 2020) there is an essential gap in algorithmic awareness among individuals from different demographics.

Another study was conducted on “Making Sense of Algorithmic Profiling: User Perceptions on Facebook” Büchi et al. (2021) the study highlighted a theme of algorithmic disillusionment, where users felt underwhelmed and disenfranchised by the perceived inaccuracies and invasiveness of Facebook's profiling. The primary role of social media algorithms is personalizing content to individual interests. Interims of the impact of personalized content Bell et al. (2021) investigate "Exploring adolescents' experiences with personalized content on social media." The study was conducted in Norway, where internet usage and social media are widely shared, potentially skewing the participants' experiences and understanding of personalization. However, the finding revealed a need for more advanced digital competence among adolescents in understanding social media personalization, as some participants believed that their phones could hear them.

2.9.2. Impact Of Social Media Algorithm on Ethiopian Users

impact of social media algorithms on Ethiopian users is multifaceted. Like others nation social media users' Ethiopian users also venerable for impact of algorithm. For instance, according to report of Amnesty International (2023) perversely Meta Facebook family company contributed to human rights violations against the Rohingya in Myanmar and warned to not replicate the same human violations elsewhere if Meta do not make reform on how its algorithm functions. However, beside warning given to Meta it continues to use its algorithm which have potential to generate traffic and user engagement for the aim serving target Ads. with the result that they boost inflammatory, harmful and divisive content, which tends to attract the most attention from users. Therefore, the system similar to violations against the Rohingya again contributed to the killing of Tigrayan ethnic group in Ethiopia. For the violence human right against Tigran ethnic group A \$2 billion lawsuit alleged that Meta’s algorithm helped fuel hate and violence (Knox, 2022). As per report of Amnesty International (2022)to stop prioritization and recommendations of hate speech and violence petitioners leads by the tech-justice nonprofit seek \$1.6 billion victim fund. The report clearly shows that the impact of algorithm in the process of attracting user engagement how it creates violence and one-sided mind users.

2.9.3 Summery of Relate Literatures Review

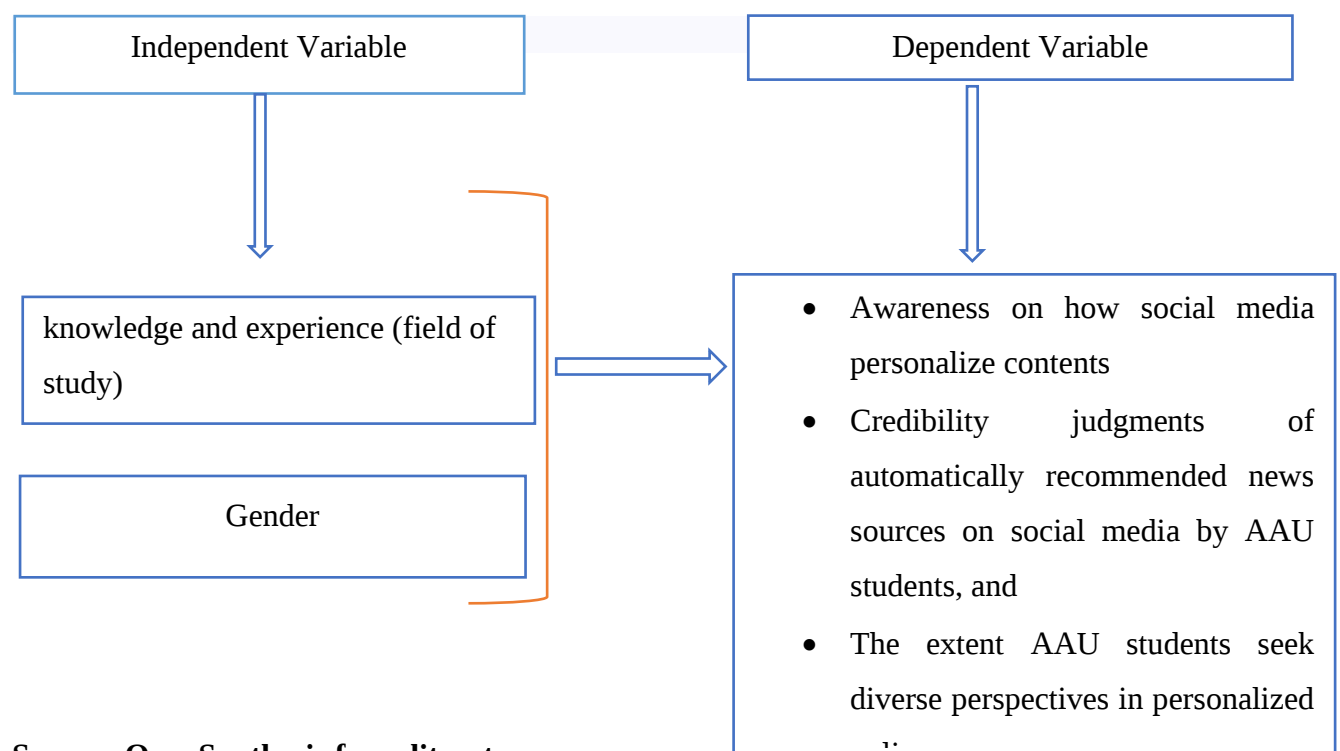
The literature review has explored the concepts of personalization and social media algorithms, highlighting their significance and impact on various aspects of social media users. Several studies have been conducted on these topics, particularly in developed countries specially in the Western countries. Also, the review has touched upon the political implications of

algorithms in online filtering and the potential biases that can be introduced to ethnic violence in Ethiopia. The above literature review shows most scholarly studies on these domains are dominated in developed countries' contexts, with minimal articles available in developing countries. Thus, this research intended to fill scholarly gap of these domain in developing countries particularly in Ethiopia.

2.10. Conceptual Framework

A basic understanding of how algorithmic personalization processes work on social media platforms is vital for social media users, especially for the youth demographic who dominates other segments of society in social media usage, to critically assess the credibility and diversity of sources and content they encounter in their news feeds. Awareness of how social media personalizes the content users encounter in their news feeds depends on certain variables, which can be divided into dependent and independent variables. The independent variables affecting online media news personalization awareness are time duration spent on social media, knowledge and experience (field of study), academic year, and gender. The dependent variables are: 1) Credibility judgments of automatically recommended news sources on social media by AAU students and 2) The extent AAU students seek diverse perspectives in personalized online news.

Figure. 1. Conceptual Framework



Source: Own Synthesis from literature

CHAPTER THREE

3. RESEARCH METHODOLOGY

This chapter provides detail explanation on the design the researcher employs, the sampling techniques used, the sample size, the instruments of data collection, and how the investigator analyzed the data. In addition, it discusses how data checked for its reliability and validity.

3.1. Research Approach

The research design represents the methodological framework delineating the conditions under which data is gathered and scrutinized, endeavoring to synthesize alignment with the overarching research objectives and judicious utilization of resources (Kothari, 2004, p. 31). This study investigated the level of awareness of AAU students have on personalized online media news in terms of credibility content and source diversity. In order to fulfil this objective, a descriptive and explanatory design are utilized. These designs are significant to describe characteristics associated with the participant of the study and explain the variables that exist between the independent variable and the dependent variable. Department of study is the independent variable, and awareness of social media personalization and how students judge the credibility of personalized news and to what extent they access a diversity of news sources and contents are dependent variables. Moreover, the study employed a convergent mixed method design in which the researcher merges quantitative and qualitative to provide a comprehensive finding of the research problem (Creswell, 2023, p. 258). The researcher typically collected both quantitative and qualitative data at almost the same time, analyzed them separately, and converged the data in interpreting the study findings.

3.2. Research Design

This Study employ a mixed research design. Using mixed-methods research design, the researcher gathered quantitative data roughly followed by qualitative data collection at the same time and combining the data to derive insights. The combination of both qualitative and quantitative data is useful for mitigating the weaknesses of each type of data, avoiding bias, and extracting nuanced information (Creswell, 2023, p. 253). A mixed research design, can leverage the strengths of both quantitative and qualitative methods, gain a deeper understanding of the research problem, and ultimately enhance the quality and credibility of findings. The combination of different data sources and methodological approaches can provide a more

holistic perspective on the awareness of AAU students regarding personalized online news, the credibility and diversity of news sources.

3.3. Sample and Sampling Techniques

3.3.1. Target Population

The population of the study refers to a group of people from which the researcher selects target informants (Babbie, 2010). According to Creswell & Creswell (2023, p. 197), identifying the size of the target population assists the researcher in employing appropriate sampling techniques. Although people of every age use social media, the most dominant social media users are the youth who are between 18-24 in society (Kalogeropoulos, 2019). Thus, the population of the study focus on regular undergraduate students at AAU. The researcher selected Addis Ababa University (AAU) as the study area because universities inherently attract a heterogeneous student population from various backgrounds. Additionally, AAU's convenient location in the capital city made it readily accessible for the researcher to conduct the study efficiently. Therefore, diverse student composition and its convenient location were the primary factors that motivated the researcher's decision to select it as the area of study.

Table 1. Students enrolled in departments included for this study (Undergraduate programs)

NO	NAME OF DEPARTMENTS	FEMALE	MALE	TOTAL
1	Broadcast and Multimedia Journalism	58	43	101
2	Computer Science	143	318	461
3	Law	141	155	296
4	School of Information Technology	127	237	364
5	Total	469	753	1222

Table 1.1. Student Cohort Info

COLLEGES	DEPARTMENT	ACADEMIC YEAR	NUMBER OF STUDENTS	PERCENTAGE
CHLSJ	Multimedia	2 nd	15	1
		3 rd	7	1
		4 th	13	1
		2 nd	22	2

CNS	Broadcast	3 rd	19	2
	Journalism	4 th	25	2
	Computer Science	2 nd	194	15
		3 rd	99	8
		4 th	168	14
CLGS	Law	2 nd	102	8
		3 rd	87	7
		4 th	107	9
AAIT	Software	2 nd	63	5
	Engineering	3 rd	120	10
		4 th	181	15
TOTAL			1,222	100

Source: AAU registrar office students statics academic year 2023/24

This study used data from students in the departments specified within the colleges outlined in the Table 1. The duration for students to complete their undergraduate studies varies across disciplines; for example, students in the School of Journalism and Communication typically complete their studies in three consecutive years, while those in the Department of Law require five years. This duration also varies among other departments included in this study. To mitigate potential biases arising from the disproportionate representation of any single department, the researcher has selected students from each department across three different academic years. Accordingly, study participants from the second-, third, and fourth-year students were included from selected departments.

3.3.2. Sampling Technique and Sampling Size

This research employed purposive, stratified, and simple random sampling techniques to select participants. Purposive sampling was used to select the College of Humanities, Language Studies, Journalism and Communication; the College of Natural and Computational Sciences; the College of Law and Governance Studies; and Addis Ababa University Institute of Technology, from the 11 colleges at Addis Ababa University.

The Department of Computer Science from the College of Natural Sciences, the Departments of Multimedia Journalism and Broadcast Journalism from the College of Humanities, Language Studies, Journalism and Communication and the Department of Software

Engineering & Information Technology was included from AAiT. These specific Departments were chosen because students in Multimedia and Broadcast Journalism are exposed to media literacy awareness due to the nature of their coursework. Similarly, students in the Departments from the College of Natural Sciences (Department of Computer Science) and Departments of Software Engineering from AAiT have exposure to algorithms topics.

To enumerate participant heterogeneity and variety, the College of Law selected purposely since the nature of their curriculum is unrelated to media literacy or algorithms. This college has also been chosen due to convenience as it is geographically close to the researcher.

The selected departments are grouped in sub-strata by academic year. The study used a confidence interval level of 95%, which is the level of certainty whether the response for each question is the true answer or not. A 5% margin of error is the amount of error from the difference in the responses the researcher can tolerate when concluding the data (Adam, 2020).

Obtaining a reliable sample size is one of the critical issues among survey researchers. In answering the concerns of quantitative study scholars, the Yamane formula proposed in 1967 found an applicable solution (Krejcie & Morgan, 1970). Using the following sample size calculation formula, the total population was identified. After total population identification, the proportion calculated from departments and their academic year was used. Finally, simple random sampling was employed to select the final study participants from each stratum.

The sample size is determined by applying the following sample size calculation formula:

$n = \frac{N}{1 + N(e)^2}$, where

n = Required sample size

n = Required sample size

e^2 = error rate which is 0.05

N = Target population

$$N=1222 \text{ therefore } n = \frac{1222}{1 + 1222(0.05)^2} = 301$$

Table 1.2. Sample size distribution

COLLEGES	DEPARTMENT	A.Y	PERCENTAGE	SAMPLE SIZE DISTRIBUTION
CHLSJ	Multimedia and Communication	2 nd	1	3
		3 rd	1	3
		4 th	1	3
	Broadcast Journalism	2 nd	2	6
		3 rd	2	6
		4 th	2	6
CNS	Computer Science	2 nd	15	46
		3 rd	8	24
		4 th	14	42
CLGS	Law	2 nd	8	24
		3 rd	7	21
		4 th	9	27
AAIT	Software Engineering	2 nd	5	15
		3 rd	10	30
		4 th	15	45
TOTAL			100	301

Source: AAU registrar office students statics academic year 2023/24

The Table 1.2 above shows that the distribution of sample sizes across colleges, departments, and academic years exhibited considerable diversity, with percentages ranging from 1% to 15% of the total sample of 301 participants. The most prominent representation emerges from the Computer Science Department at the CNS, which boasts 15% (46 students) in the 2nd year and 14% (42 students) in the 4th year, closely followed by the Software Engineering Department at AAiT with 15% (45 students) in the 4th year and 10% (30 students) in the 3rd year. In stark

contrast, the Multimedia and Broadcast Journalism departments at CHLSJ exhibit the smallest sample sizes, accounting for only 1% to 2% across different academic years. This heterogeneity in sample size distribution raises vital concerns regarding the representativeness and generalizability of the study's findings, warranting a comprehensive evaluation of the existing literature and theoretical frameworks to identify potential patterns, deviations, or limitations. Larger sample sizes generally augment the statistical power and reduce sampling errors, whereas smaller samples may constrain the ability to draw broad conclusions applicable to the entire population. The variations across academic years suggest the influence of factors such as accessibility, participation rates, or confounding elements within the data collection process, necessitating rigorous investigation and implementation of balanced, representative sampling techniques.

3.4. Source Of Data

3.4.1. Primary Source of Data

Survey questionnaire and in-depth interviews, were applied to collect accurate information and firsthand data. Firsthand data was collected from sample students from departments and academic year selected as inclusion of this study and in-depth interviews from students who participated in the survey questionnaire and were willing to participate in in-depth interviews.

3.4.2. Secondary Sources of Data

Secondary data sources utilized in this research were magazines, books, journals, and different published and unpublished documents related to users' awareness of personalized online news in terms of credibility and news source diversity.

3.5. Methods Of Data Collection

To collect data from informants, the researcher employed a survey questionnaire and a semi-structured in-depth interview. The study utilized Likert scale measurement type questionnaires, the most commonly used attitude measurement technique in social sciences. Participants were asked to indicate their level of agreement with a range of attitude statements. Each agreement or disagreement level was assigned a value on a predetermined scale.

3.5.1. Questionnaire

The survey questionnaire used for this study has five (5) sections:

- ✓ demographic information

- ✓ Students Awareness on Personalized Online News sources (social media)
- ✓ Perceptions on personalized online media contents
- ✓ Awareness of automatically recommended online News Credibility
- ✓ Seeking Diverse News Perspectives

Demographic information section questions are prepared in the form of multiple choice and the rest sections are prepared in the form of Likert scale which respondent answer to the degree of their agreement to statement given for them. Some items are repeated systematically in the questionnaire in different positions in order to crosscheck responses given by subjects. But throughout the data analysis, these questions have been collected under similar categories and the scores for each factor added up, and then the sum has been divided by total number of similar questions to obtain the mean or average score for each factor. A structure questionnaire was considered as a major data collection tool. It was administered to the sample subjects.

3.5.2. In-Depth Interviews

An in-depth interview is one of the data collection instruments used in qualitative studies, which is helpful in gathering nuanced data from individual experiences (Sharan & Tisdell, 2022). For the in-depth interviews, in depth interview protocol were first prepared in English and then translated into Amharic before conducting interview. To select participants for the in-depth interviews from those who had previously participated in the survey questionnaire, the researcher employed a convenient sampling technique. The rationale for utilizing this sampling method was to select 8 students based on their willingness to participate in the in-depth interviews. Thus, the in-depth interviews were conducted with consideration for gender differences, academic year, and department. The study utilized a semi-structured interview guide, which allowed the researcher to resequencing the questions and enabled the informants to respond in any manner they desired. The primary rationale for employing this method was that it facilitated learning from different subgroups of the population to better comprehend their awareness of how social media personalizes content for individuals, how they judge the credibility of personalized content, and the extent to which they consume diverse content and sources. The interviews take place in person or through virtual platforms, offering convenience in scheduling and participation. The criteria for selection include the diversity of disciplines and gender.

3.6. Method of Data Analysis

3.6.1. Quantitative Analysis

The quantitative data acquired through surveys undergone comprehensive statistical analysis Using SPSS software version 27. Descriptive statistics, consisting of measures of central tendency (mean, median, mode), measures of variability (variance, standard deviation), and frequency distribution, utilized to show overall perceptions and tendencies of participants. Measures of central tendency in describing the participants' central tendency on their perceptions regarding credibility and source and content diversity of personalized online news. Frequency distributions used to visualize the dispersion of informants' responses. Inferential statistics, Kruskal-Wallis Test, conducted to examine significant differences in awareness levels, credibility perceptions and extent students seek diversity news sources between different departments.

3.6.2. Qualitative Analysis

The qualitative data obtained through in-depth interviews undergone thematic analysis. This method involves discovering repeating themes, trends, and notions within the interview transcripts. Initially, interviews are transcribed verbatim; then, transcripts are classified for relevant information. Codes are then grouped into more prominent themes representing participants' perceptions of accuracy, trust, and diversity in algorithmic news selection. Finally, the finding of bot qualitative and quantitative data merged and interpreted.

3.7. Pilot Study

Pilot testing is vital to assess the appropriateness of the instrument for the study sample, to evaluate the internal consistency of items, and to modify questions and directions. To this end, a pilot study was conducted for this research. The study checked a sample of 5 undergraduate students from Haramaya University who are related in their academic discipline selected for this study with a mixture of randomly selected five samples of undergraduate students from Addis Ababa University. The survey questionnaire was on a Likert- scale and distributed to the respondents. Before distributing the questionnaires, the researchers received comments from supervisors as well as peer feedback. Then, based on data from 10 students selected as sample researcher did a reliability test using Cronbach's Alpha. Accordingly, the SPSS output result indicated that the instrument reliability is .815. which is an acceptable level of reliability based on the generally accepted threshold of 0.7 or higher for Cronbach's alpha (Taber, 2018). After

the pilot study, modifications were made to the survey questionnaire to improve the reliability and clarity of the data collection instrument.

Table 1.3. Reliability Test result for the Questionnaire

Reliability Statistics	
Cronbach's Alpha	N of Items
.815	32

Source: own SPSS output (2024)

3.8. Ethical Consideration

Throughout this research endeavor, all procedures and processes adhered strictly to ethical principles and guidelines governing research practices. The study proposal underwent a comprehensive review and received endorsement from knowledgeable professionals well-versed in the research domain. Firstly, a formal cooperation letter was acquired from the Department of Sociology, affirming that the researcher's sole objective was academic. Given the qualitative nature of the study, which delved into participants' detailed experiences, it was of utmost importance to respect the diversity of their perspectives and perceptions concerning the issue under investigation. Data collection was contingent upon the informed consent and willingness of the informants. The researcher explicitly stated to the informants that the study's purpose was purely academic. The confidentiality and privacy of respondent during interviews and focus group discussions, the identities of the informants and any other identifying information were not disclosed. Moreover, throughout the entire data collection process, the researcher ensured that the informants' dignity was respected. Furthermore, the researcher assured the informants that their participation in the study posed no potential harm or risk.

CHAPTER FOUR

4. DATA PRESENTATION, ANALYSIS, AND DISCUSSION

This chapter focuses on presenting two parts of the study: quantitative data followed by qualitative data. The first part of the study data presentation initially deals with descriptive statistics of survey respondents according to their demographic characteristics, and the second part of the analysis deals with inferential statistics, which comprises other subsections of survey questionnaire data.

4.1. Response Rate

A total of 301 questionnaires were distributed to the target population; 292 of them replied with Answers. Then, in the process of data cleaning on 10 subjects, inconsistencies and missing variables were identified and excluded from analysis, making the number of valid respondents 282 (93%).

4.2. Demographic Information of The Respondents

The demographic profiles of the study sample have been described using descriptive statistics. Accordingly, this section analyses the characteristics of 282 respondents who returned valid questionnaires for the study. Descriptive statistics was done using frequency counts and percentages for demographic information such as gender, age, department of study and academic years. The result of the analysis is presented in the Table 1.4:

Table 1.4. Demographic information of respondents

	Frequency	Percent
Gender		
Male	170	60.3
Female	112	39.7
Age		
19-25	281	99.6
26-30	1	.4
Department		
Broadcast Journalism	18	6.4
Multimedia Journalism	9	3.2
Law	65	23.

Computer Science	105	37.2
Software Engineering	85	30.1
Academic Year		
2 nd	87	30.9
3 rd	80	28.4
4 th	115	40.7
Total	282	100

The Table 1.4 given above shows demographic information about a sample of 282 individuals. Regarding gender, the data reveals that the majority of respondents were male, 60.3%, while 39.7% were female. In terms of department, the largest proportion of respondents, 37.2%, belongs to the Computer Science department, followed by 30.1% from Software Engineering. The Law department accounts for 23%, while Broadcast Journalism and Multimedia Journalism constitute 6.4% and 3.2%, respectively. Respondents come from a range of academic years: The data indicates that the sample is distributed across different academic years of study. The majority, 40.7%, are in their fourth year, while 30.9% are in their second year, and 28.4% are in their third year.

4.2.1. Most Frequently Used social media

Figure 1.1 shows most frequently used social media by subjects. Accordingly, YouTube platform is the most frequently used social media platform, with respondents 28.3% indicating it as their preferred social media. TikTok holds the second position, with respondents 20.5% favoring this platform. Instagram ranked third, with respondents 16.9% preferring it as their most frequently used social media platform. Telegram holds the fourth place, attracting respondents 15.7%. LinkedIn followed closely, with respondents 10.9%. Facebook is the preferred choice for only respondents, 7.4%. Lastly, with marginal respondents, 0.3% indicated a preference for the platform "X". The finding of this study contradicts to finding of the research of Internews (2023). Cross-tabulation was done to see patterns of variables between gender and academic departments of respondents and across individual social media platforms. The finding indicates that male respondents dominate all social media outlets, including YouTube, TikTok, and Instagram, among others. While regarding departments, Computer Science Department respondents dominate social media platforms, including YouTube,

Telegram, and Instagram. However, a slightly higher number of users from law students in Facebook and TikTok users in the Software Engineering Department.

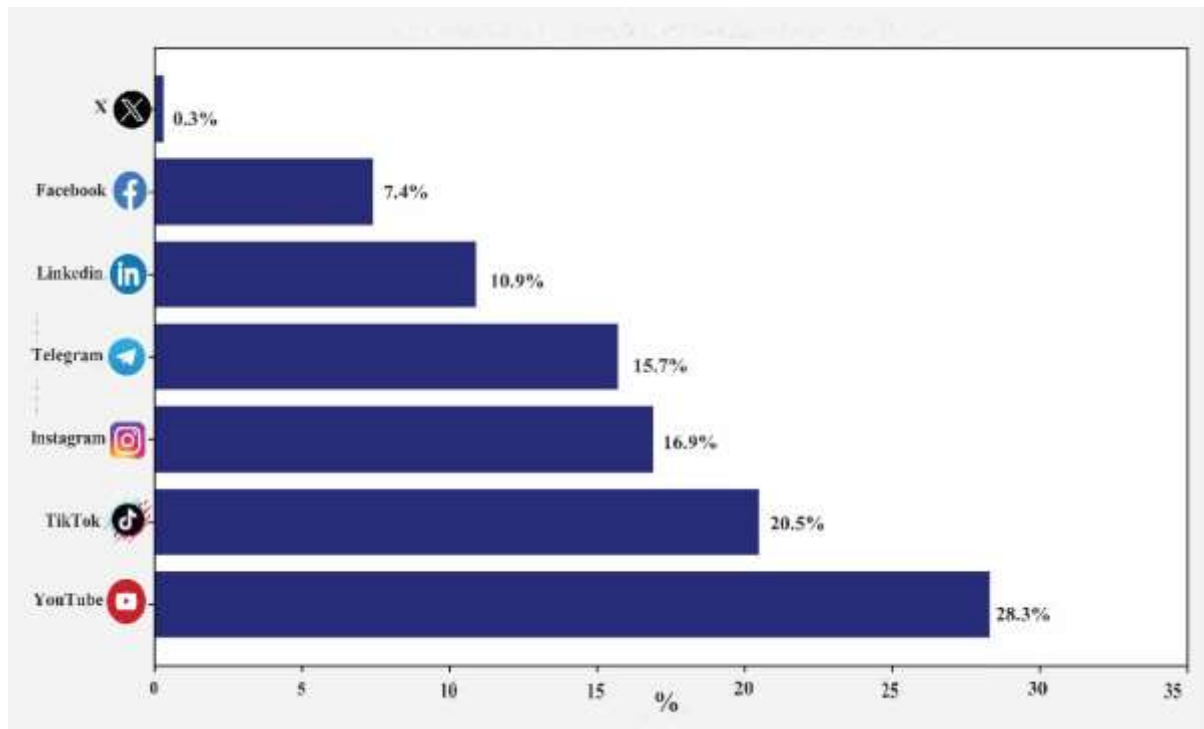


Figure 1.1 Respondents most frequently used social media platform

Source: Own survey 2024, SPSS output

4.2.2. Time Spent on social media

Figure 2, depicts that the majority of respondents, 40.2%, spend more than three hours per day on social media, with a substantial 36.5% dedicating 2 and 3 hours. The cross-tabulating analysis indicated many patterns in the data regarding time spent on social media platforms with the field of study and gender. Examining the Departmental differences, the results indicate that students in the Broadcast Journalism program exhibit the highest amount of time usage. The gender-based analysis further elucidates the patterns in social media engagement. Male respondents show a higher percentage of spending the highest amount of time on social media platforms compared to their female counterparts.

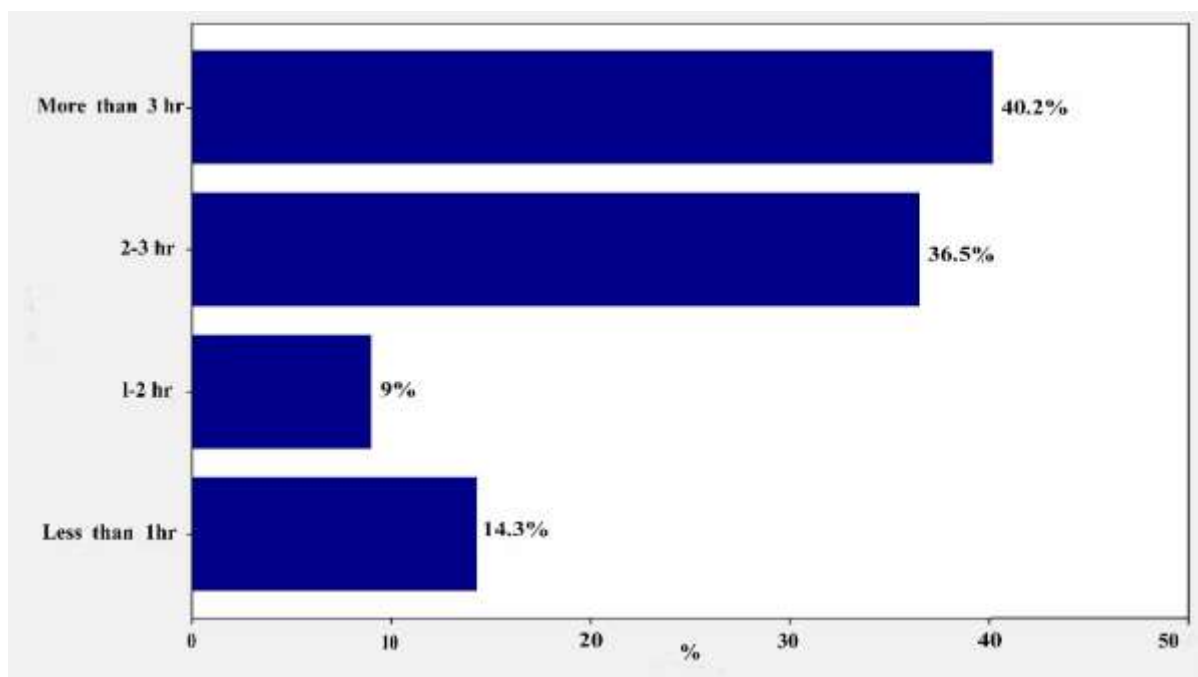


Figure 1.2. Average time spent on social media on daily basis

Source: Own survey 2024, SPSS output

4.3. Reliability Test

The researcher conducted a reliability test utilizing Alpha Cronbach's. Lee Cronbach, who developed the Alpha test in 1951, arranged this test from 0 to 1 (Cronbach, 1951). thus, a higher number shows more internal consistency of items measuring the same research question. Thus, as shown in Tables 1.5, 1.6, 1.7 and 1.8, the tests of Cronbach's Alphas for the first, second third and fourth research questions items have the reliability of $\alpha = .791$, $\alpha = .750$, $\alpha = .752$, and $\alpha = .811$, respectively.

Table 1.5. Reliability of the 1st question

Reliability Statistics	
Cronbach's Alpha	N of Items
.791	11

Table 1.6. Reliability test of the 2nd research question

Reliability Statistics	

Cronbach's Alpha	N of Items
.750	4

Table 1.7. Reliability test of the 3rd research question

Reliability Statistics	
Cronbach's Alpha	N of Items
.752	12

Table 1.8. Reliability test of the 4th research question

Reliability Statistics	
Cronbach's Alpha	N of Items
.811	8

4.4. Awareness of News Selection and Personalization of Online Media News

The following Table 1.9 prepared to investigate awareness users have on the way social media collect user data to personalize news content and prioritization. Accordingly, surveyed students were asked to respond on 11 items in which two items were merged due to their similarity. Then the number of items become 10. The respondents were asked to rate to degree of their agreement using a 5-point Likert scale in which 1 point was assigned to Strongly disagree, 2 points to Disagree, 3 points as Neutral, 4 points as Agree and 5-point as Strongly Agree. Thus, details of the mean value and standard deviation value for each variable were presented together as follows:

Table 1.9. Awareness of News selection and Personalization of online Media

	Descriptive Statistics							
	NO	SA %	D%	N%	A%	SA%	Mean	Sat. Dev.
I frequently encounter personalized content on social media that aligns with my interests and contents related to my previous consumption.	282	8.5	19.1	17.0	31.6	23.8	3.43	1.273

I know that the news suggested to me on social media is personalized to my interests.	282	7.6	23.0	28.3	26.6	14.5	3.41	1.092
I know that when I use social media platforms like Facebook, YouTube, Google, TikTok, etc., these platforms collect data about me.	282	13.8	19.1	16.3	26.2	24.5	3.36	1.244
I know how social media personalize my news feeds.	282	7.1	28.0	23.8	20.2	20.9	3.28	1.383
I accept when websites asked me to accept or reject their cookies	282	11.3	17.4	22.3	38.3	10.6	3.20	1.253
I understand the types of user data being collected by social media.	282	13.5	19.1	22.0	29.4	16	3.20	1.185
I know why different websites collect cookies.	282	13.8	29.1	17.7	20.9	18.4	3.15	1.283
I know the reasons why social media platforms collect data about their users.	282	13.5	27.7	20.9	23.8	14.2	3.01	1.341
I adjust social media privacy settings and customize it manually	282	20.6	28.7	26.2	10.6	13.8	2.98	1.275
I review the privacy policies of social media platforms I use.	282	26.2	36.2	17.7	11.3	8.5	2.68	1.295
Valid N (listwise)	282							

Source: Own survey 2024, SPSS output

According to Table1.9, the findings of descriptive data showed that a majority of AAU students (55.4%) frequently encounter personalized content on social media that aligns with their interests and previous consumption. The highest mean value (Mean = 3.43, SD = 1.273) was also recorded in this item, which indicates a relatively high level of awareness among students regarding the personalization of news content on their social media feeds.). Additionally, a significant proportion of AAU students (41.1%) are aware that the news suggested to them on social media is personalized to their interests (Mean = 3.41, SD = 1.092). Further, the data reveals that a large number of AAU students (50.7%) are aware that online media, such as Facebook, YouTube, Google, and TikTok, collect data about them (Mean = 3.36, SD = 1.244). However, around 51.8% of respondents do not fully understand how social media platforms personalize their news feeds (Mean = 3.28, SD = 1.383). This indicates that while most students are aware that they frequently encounter personalized content and know that different social media track their online activities but, they lack a well understanding of the underlying system of how social media personalize news content.

Furthermore, descriptive data indicate that a majority of AAU students (48.9%) accept website cookies, suggesting a willingness to share their data in exchange for personalized content (Mean = 3.20, SD = 1.253). Also, a considerable number of respondents (32.5%) do not fully understand the types of user data being collected by social media platforms (Mean = 3.20, SD = 1.185). Similarly, a significant number of students (42.9%) do not know why different websites collect cookies (Mean = 3.15, SD = 1.283). This highlights a lack of understanding among students about the types of data being collected by online media and the purpose and implications of cookie-based data collection practices employed by websites. However, when they are prompted to accept cookies, different websites use to collect user data, majority of AAU students (48.9%) accept website cookie. This suggests those students are unknowingly exposing themselves to personalized contents.

In addition, a substantial number of students (48.8%) do not regularly adjust their social media privacy settings or customize them manually (Mean = 2.98, SD = 1.275).

When they are highly aware of social media collecting user data, a significant proportion of students (43.2%) are not fully aware of the reasons why social media platforms collect data about their users (Mean = 3.01, SD = 1.341). Moreover, the majority of respondents (62.4%) do not regularly review the privacy policies of the social media they use (Mean = 2.68, SD = 1.295). While many students appear to be aware of the existence of personalized content and data collection, a significant number of students lack an awareness of the underlying system and the implications of their data being collected and used by these platforms. This highlights the need for increased education and awareness campaigns to empower students to make more informed decisions about their online engagement and data privacy.

This study finding similar to the research of Powers (2017) who found out that most students were aware that user data are collected and they experience personalized news on their news feed, but could not explain in detail.

The study of Gran et al. (2020) in highly digitalized Norwegian population found out, they have no awareness of algorithms. While, the current study finding emphasizes, most of respondents have awareness on existence of personalization, but they lack in understanding how personalization work. This indicate having access to digital devices and infrastructure does not guarantee for awareness on how social media algorithm works.

4.5. User Perception on Personalized Online News

The following Table 2 is prepared to measure factors respondents believe affect either the types of news they encounter on social media. This item is prepared with the response to five alternatives.

Table 2. What factors do you believe affect either the types of news you encounter on your social media

	Responses		Percent of Cases
	N	Percent	
My action	189	40.	62.8
My social media profile information	138	29.2	45.8
Action my friends take	67	14.2	22.3
Action people I don't know take	27	5.7	9.0
Unsure	51	10.8	16.9
Total	472	100.	156.8

Table 2 The shows that with respect to "My action" a significant number of students (40.0%) responded as their first cause. The second most frequently cited reason for news personalization was "My social media profile information" (29.2%). Students are somewhat aware of the influence of their social connections on news personalization, with 14.2% of subjects citing "Action my friends take" as a factor for personalized content.

However, only 5.7% of respondents attributed news personalization to "Action people I don't know take,". Also indicate a substantial number of students (10.8%) are "Unsure" about the reasons behind the personalization of news content on their social media platforms. The findings from this study align with previous research highlighting awareness news personalization (Powers, 2017).

This suggests that there is still room for improvement in educating students about the system and the way algorithms utilized by online platforms personalize news.

- 2. Do you find it helpful, or relevant when your social media platforms display content related to your browsing history and online activities?**

The following Figure 1.3 is prepared to measure perceptions respondents have regarding their relevancy to their interest in content recommended by social media algorithms with 4 alternative responses.

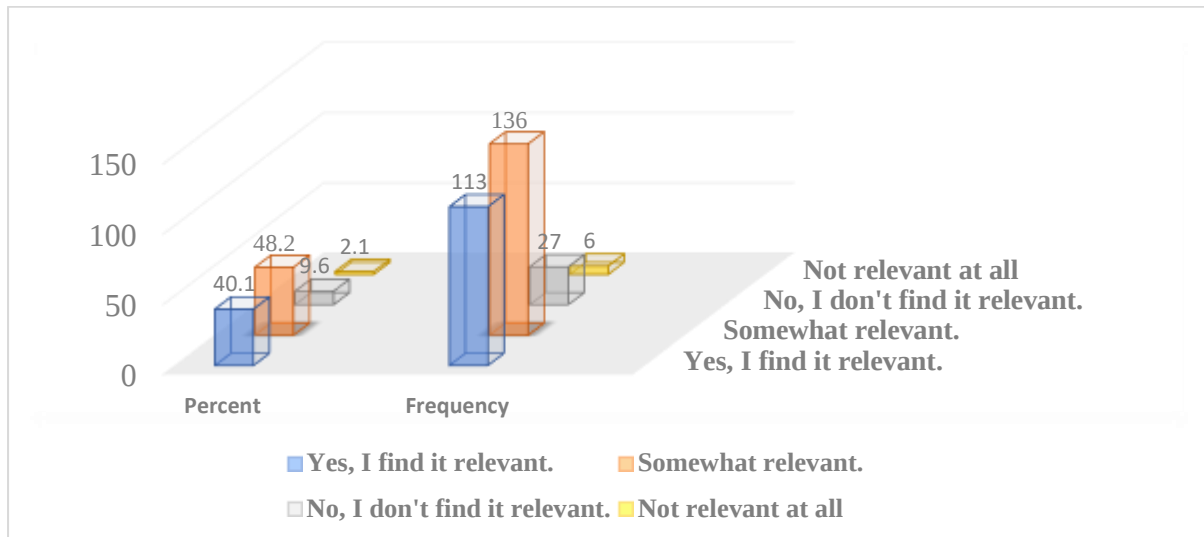


Figure1.3 Relevancy on content related to user browsing history and online activities

Figure 1.3 indicate that a majority of respondents find the personalized content displayed on their social media platforms as relevant. In line with this, 48.2% of the respondents indicated that they find the personalized content relevant to their interests. While 40.1 selected "Yes, I find it relevant."

Additionally, cumulative percentage of those who find the content "Yes, I find it relevant" and "Somewhat relevant" is 88.3%, indicating a high level of acceptance and appreciation for the personalization of news content based on their online activities and browsing history. In contrast, only 9.6% of the respondents indicated that they "No, I don't find it relevant," and only 2.1% found the personalized content "Not relevant at all." This suggests that the negative perception of personalized news content among AAU students is relatively low.

The findings presented on the figure suggest that AAU students have a generally favorable perception of the personalized news content displayed on their social media platforms, with the majority finding it relevant to their interests and online activities. This aligns with findings by Liang et al. (2006) who highlight Users favor content that is recommended by a process in which they actively participate.

3. **When you see news articles or video contents in your social media news feed related to websites you've previously visited or activities you've engaged in online, how does that make you feel?**

The following Figure 1.4 is prepared to measure the feelings users have for personalized content. The item is requested with the response of four alternatives.

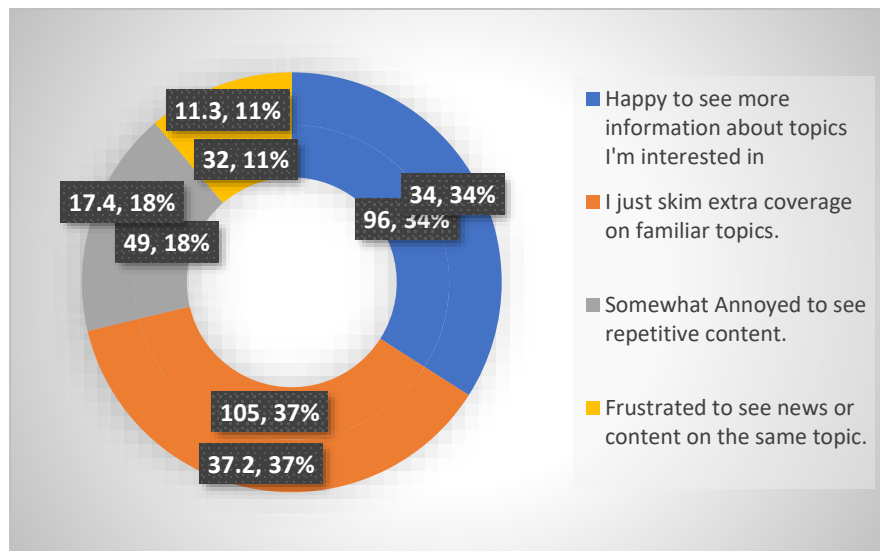


Figure 1.4 User feeling for news articles or video contents on news feed related to websites previously visited

Figure 1.4 indicate that a considerable number of subjects have a positive feeling about the personalized content they encounter on their social media feeds. Connected to this, 34.0% of the students indicated that they feel "Happy to see more information about topics I'm interested in" when they come across such personalized content. Further, 37.2% of the students reported that they "just skim extra coverage on familiar topics,". While a majority of respondents exhibit positive or neutral perceptions, a notable proportion of them have negative feelings towards the personalized content they experience on social media: 17.4% of the respondents feel "Somewhat Annoyed to see repetitive content." 11.3% of the respondents feel "Frustrated to see news or content on the same topic."

The study's findings indicate that a considerable percentage of students (28.7%) have negative feelings about the personalized content they encounter. This indicates that, while many students appreciate the personalized content suggested to their interests, a sizable portion of them would benefit from greater diversity and novelty in the news and information they receive. The finding of the study is congruent with Gran et al. (2020) study elaborated that, while majority

of participants prefer algorithmically recommended news but, few of them have very negative attitudes.

4. When you come across another article about a topic you've read or watched about before in your news feed, how likely are you to read or watch it?

The following Figure 1.5 is prepared to measure how user respond when they encounter news content similar to their previous consumption. The survey item is prepared with five alternative answers.

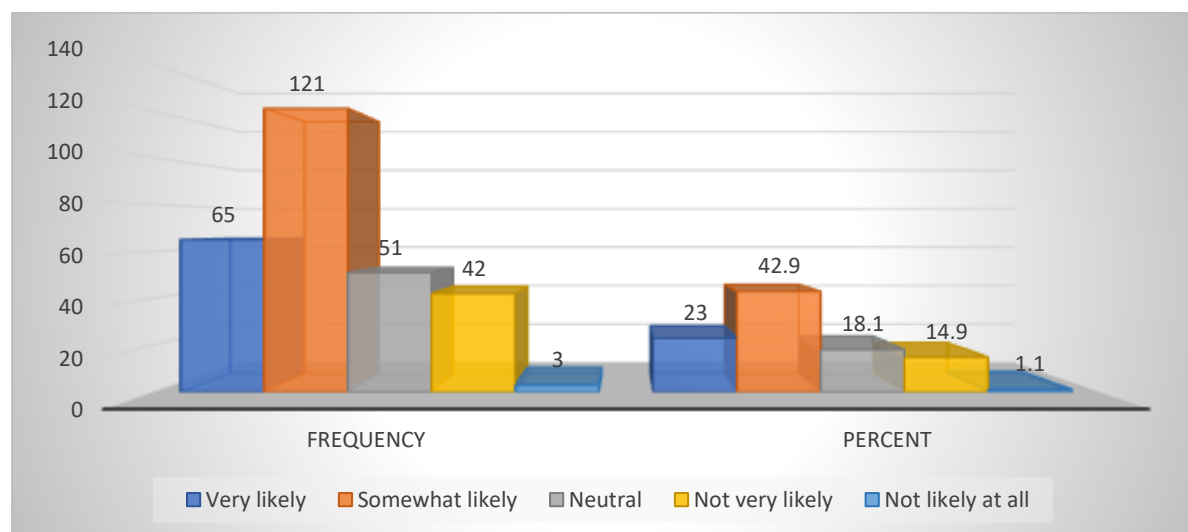


Figure1.5. How likely user read or watch it when they come across another article about a topic they have read or watched about before

Figure 1.5 shows that varied pattern in the likelihood of students engaging with repeated content in their news feeds. 23.0% of the respondents indicated that they are "Very likely" to read or watch the repeated content. While, 42.9% reported that they are "Somewhat likely" to engage with the repeated content. 18.1% expressed a "Neutral" attitude towards the repeated content.

A majority of students exhibit a positive or neutral disposition towards repeated content, and a notable proportion of them are less likely to engage with such content. Connected to this, 14.9% of the students said they are "Not very likely" to read or watch the repeated content. Moreover, 1.1% of the respondents cited that they are "Not likely at all" to engage with the repeated content.

A significant percentage of AAU students (16.0%) are not very likely or not likely at all to engage with repeated content suggests that the personalization algorithms employed by social

media platforms may need to be refined to better cater to the diverse preferences and expectations of the target audience. this, highlight that a significant proportion of AAU students are likely to engage with repeated content in their news feeds, and a notable percentage exhibit aversion or indifference towards such content.

5. In what ways do you think seeing news related to your previous consumption on your news feed influences your perception of the social media platforms you use?

The following Figure 1.6 is prepared to measure how user respond when they encounter news content similar to their previous consumption. The survey item is prepared with four alternatives in which respondents choose alternative of their perception.

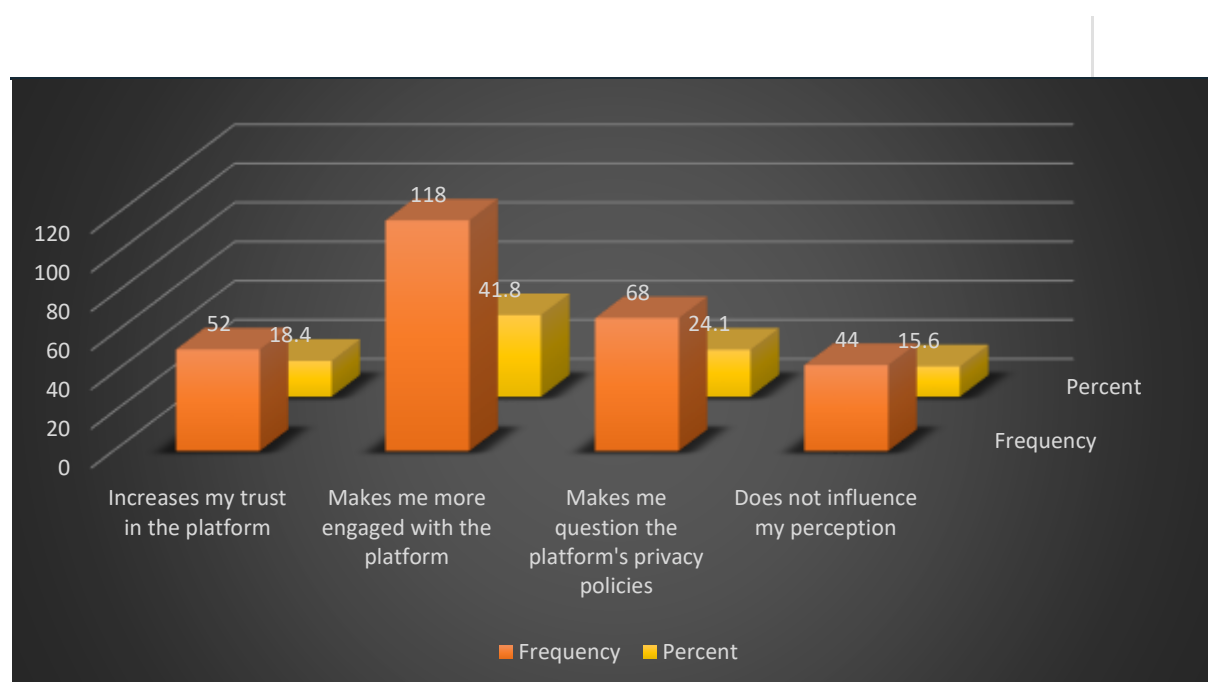


Figure1.6. User attitude toward influence of seeing news related to previous consumption on news feed

Figure 1.6 reveal that the majority of students (41.8%) feel that seeing news related to their previous consumption "Makes me more engaged with the platform." A considerable number of students (24.1%) show that seeing news related to their previous consumption "Makes me question the platform's privacy policies." A smaller percentage of students (18.4%) reported that the experience of seeing personalized news "Increases my trust in the platform." This suggests that for some users, the personalization of news content can contribute to a greater sense of trust and confidence in social media platforms. While, 15.6% of the students mention that seeing news related to their previous consumption "Does not influence my perception" of

the social media platforms. This indicates that a segment of the student population may have a more neutral or indifferent attitude towards the personalization of news content. The findings suggest that AAU students have diverse perceptions and reactions to the personalization of news content on social media platforms. While a majority exhibit increased engagement, a significant proportion also express concerns about privacy policies. This highlights the need for social media platforms to enhance transparency regarding their data collection and personalization practices, as well as to address user concerns about privacy and data protection.

These insights can inform the development of more user-centric and transparent personalization strategies that balance the benefits of personalization with the need to address user privacy concerns.

4.6. Automatically recommended online News Credibility

4.6.1. Credibility Perceptions on Contents Recommended on News Feed

The following Table 2.1 is prepared to measure perceptions of the credibility of news recommended on user new feed utilizing algorithm. Each item contains five scales ranging from 1 to 5.

Table 2.1. Credibility Perceptions on Contents Recommended on News Feed

Descriptive Statistics									
	NO	SD%	D%	N%	A%	SA%	Mean	Sat. Dev.	
Automatically recommended news comes on my social media news feed are accurate and trustworthy.	282	13.8	28.4	26.6	14.5	17.0	2.89	1.252	
I believe that the automatically recommended social media news and content I see are unbiased and balanced.	282	22.7	23.8	21.3	27.0	5.3	2.68	1.238	
I am confident that automatically recommended social media news and content are often from credible sources.	282	23.4	31.1	14.2	29.1	3.2	2.59	1.220	
I perceive that the automatically recommended social media news and content I encounter are well-researched and fact-checked.	282	13.1	45.7	21.6	15.6	3.9	2.51	1.031	
I believe the news stories suggested to me on social media reflect high journalistic standards and ethics.	282	29.1	34.0	22.0	11.3	3.5	2.26	1.104	

Source: Own survey 2024, SPSS output

The study investigated AAU students' perceptions of the credibility of news sources recommended to them on their social media feeds. Table 2.1 provide important aspects of online news consumption. The mean scores for the various credibility-related aspects of recommended news content range from 2.26 to 2.89 on a 5-point scale, indicating a generally negative perception among AAU students. The standard deviations, ranging from 1.031 to 1.252, suggest a fair amount of variability in responses, reflecting the diversity of perspectives within the student population.

The majority of students are skeptical about the credibility of the news content suggested to them algorithmically on social media. The mean score of "Automatically recommended news comes on my social media news feed are accurate and trustworthy" is 2.89 (SD = 1.252), with 42.2% of respondents disagreeing or strongly disagreeing and only 31.5% agreeing or strongly agreeing. This shows that students are generally doubtful about the truthfulness of the news they encounter through personalized recommendations.

Similarly, the descriptive data show that many respondents are not confident in the objectivity and research quality of the automatically curated news content. The mean score for the statement "I believe that the automatically recommended social media news and content I see are unbiased and balanced" is 2.68 (SD = 1.238), with over 46% of respondents disagreeing or strongly disagreeing and only 32.3% agreeing or strongly agreeing. Furthermore, the mean score for the statement "I am confident that automatically recommended social media news and content are often from credible sources" is 2.59 (SD = 1.220), and 54.5% of students expressed doubts about the level of fact-checking and journalistic standards applied to these stories. Moreover, regarding the statement "I perceive that the automatically recommended social media news and content I encounter are well-researched and fact-checked", with a total of 58.8 of respondents disagreeing and strongly disagreeing (Mean 2.51=SD 1.031).

Furthermore, the Table 2.1 show that with total of 63.1 of respondents disagreed and strongly disagreed (Mean 2.26=SD 1.104) regarding "I believe the news stories suggested to me on social media reflect high journalistic standards and ethics".

These findings, of the study, reveal that respondents are highly aware of the potential issues surrounding the credibility of personalized news content on social media. This awareness is a crucial step towards empowering students to critically evaluate the news they consume and make more logical decisions about the reliability of their information sources.

4.6.2. Credibility Judgments on Automatically Recommended News

The following Table 2.2 is prepared to measure credibility judgment on algorithmically recommended news and contains 7 items. Each item contains five scales ranging from 1 to 5.

Table 2.2. Credibility Judgment on Contents Recommended on News Feed

	Descriptive Statistics							
	NO	SD %	D%	N%	A%	SA %	Mean	Sat. Dev.
I pay attention to the number of shares, likes, or comments a news story has on social media when assessing its credibility.	282	3.9	18	27	37	13	3.49	1.258
I am more likely to trust news stories recommended on social media if they are shared or endorsed by people I know and trust.	282	11.0	11.0	18.4	37.2	22.3	3.48	1.148
I rely more on news sources recommended by social media platforms when they are accompanied by user ratings or reviews.	282	10.6	7.4	19.5	48.6	13.8	3.38	1.048
I consider factors like the publisher's reputation when evaluating auto-recommended news articles.	282	4.6	20.6	37.6	28.0	9.2	3.32	1.108
I verify automatically recommended online sources news articles before liking commenting and share for other.	282	8.9	11.7	30.1	37.2	12.1	3.28	1.105
I verify or fact-check news stories from my social media feeds with other sources	282	12.4	12.4	29.4	29.8	16.0	3.24	1.226
I am more likely to accept news as credible if the news stories recommended to me on my social media feeds align with my preexisting beliefs.	282	5.0	19.1	35.1	24.1	16.7	3.17	1.007
Valid N (listwise)	282							

Source: Own survey 2024, SPSS output

As depicted in the Table 2.2, the mean scores for the various credibility-related factors range from 3.17 to 3.49 on a 5-point scale, indicating that students generally place a moderate level

of importance on these elements when judging the credibility of recommended news. The standard deviations, ranging from 1.007 to 1.258, suggest a fair amount of variability in responses, reflecting the diversity of perspectives within the student population.

The findings reveal that students tend to rely heavily on social proof when evaluating the credibility of automatically recommended news on user news feeds. The item, "I pay attention to the number of shares, likes, or comments a news story has on social media when assessing its credibility", 50 % of respondents agreed and strongly agreed with (Mean 3.49=SD 1.258). Similarly, the mean score for the statement "I am more likely to trust news stories recommended on social media if they are shared or endorsed by people I know and trust" is 3.48 (SD = 1.148), with 59.5% of respondents agreeing or strongly agreeing.

Also, students are more likely to trust news content accompanied by user ratings or reviews, with a mean score of 3.38 (SD = 1.048) for the statement "I rely more on news sources recommended by social media platforms when they are accompanied by user ratings or reviews." This indicates that students value the collective judgments of other users when determining the credibility of recommended news.

The results also show that students consider the reputation of the news publisher when evaluating automatically recommended articles, with a mean score of 3.32 (SD = 1.108) for the statement "I consider factors like the publisher's reputation when evaluating auto-recommended news articles." This suggests that students are aware of the importance of source credibility in assessing the reliability of online news. Moreover, a significant proportion of respondents exhibit a proactive attitude towards verifying automatically recommended online sources and news articles before engaging with them (liking, commenting, or sharing).37.2% (Mean 3.28=SD 1.105) of respondents "Agree" that they verify automatically recommended online sources and news articles before liking, commenting, or sharing them. 12.1% "Strongly agree" with this practice.

29.8% of respondents "Agree" that they fact-check news stories from their social media feeds with other sources, and 16.0% "strongly agree" with this practice.

Furthermore, students are not always willing to accept recommended news as credible, even if it aligns with their preexisting beliefs. The mean score for the statement "I am more likely to accept the news as credible if the news stories recommended to me on my social media feeds align with my preexisting beliefs" is 3.17 (SD = 1.007), with only 40.8% of respondents agreeing or strongly agreeing. This suggests that users assume news align with their preexist

as credible which can be the potential impact of personalized news which force users to stay with their prior attitude. for confirmation bias and make efforts to verify the information they encounter.

The findings presented in the Table 2.2 suggest that students employ a multi-faceted approach to assessing the credibility of news content recommended to them on social media. They rely on a combination of social proof, user ratings, publisher reputation, and personal belief alignment while also acknowledging the importance of fact-checking and cross-referencing information from multiple sources. Supporting this finding, Swart (2021b) revealed that the respondents perceive cross-referencing news and their social networks, as the best guarantee they would act upon reliable information.

4.7. User Diverse News Consumption on Personalized Online Environment

The following Table 2.3 is prepared to measure how user access diverse news sources and content in the environment of filter bubble and contains 8 items. Each item contains five scales ranging from 1 to 5.

Tale 2.3: Extent to seek out diverse perspectives and viewpoints in personalized online news sources

	NO	SD%	D%	N%	A%	SA%	Mea n	Sat. Dev.
I am open to changing my opinions or beliefs based on new information or exposure to alternative viewpoints through news consumption.	282	6.0	12.8	20.9	46.8	13.5	3.49	1.068
I believe it is important to read news stories from sources that challenge my existing beliefs and assumptions.	282	5.7	16.0	24.1	42.2	12.1	3.39	1.069
I cross-reference news stories from multiple sources with different perspectives before forming an opinion	282	6.4	26.2	29.1	23.4	14.9	3.14	1.154
I make an effort to follow news sources outside of my personalized social media feeds.	282	7.1	37.6	24.1	18.4	12.8	2.92	1.163
I consciously allocate time to explore news sources that represent a range of cultural, social, and geographic backgrounds to gain a more global understanding of issues.	282	11.0	35.1	20.6	22.3	11.0	2.87	1.201
I intentionally follow or subscribe to news sources that represent diverse viewpoints,	282	14.5	36.2	20.2	19.5	9.6	2.73	1.207

even if I disagree with some of their Viewpoints.								
When browsing my social media feeds, I encounter a variety of news sources and content creators with differing political stances, which helps me understand multiple sides of an issue.	282	11.3	38.3	26.6	19.1	4.6	2.67	1.054
When reading news online, I actively seek out sources with opposing viewpoints from my own.	282	20.2	39.4	22.0	14.5	3.9	2.43	1.085
Valid N (listwise)	282							

Source: Own survey 2024, SPSS output

Table 2.3 shows that the majority of students (46.8% agreeing and 13.5% strongly agreeing) are open to changing their opinions or beliefs based on new information or exposure to alternative viewpoints through news consumption. The mean score for this item was 3.49 (SD = 1.068), indicating a generally positive attitude towards being open-minded.

Regarding the importance of reading news stories from sources that challenge existing beliefs and assumptions, 42.2% of students agreed, and 12.1% strongly agreed. The mean score for this item was 3.39 (SD = 1.069), suggesting that students recognize the value of exposing themselves to diverse perspectives.

However, the students may not always actively seek out diverse viewpoints. Only 23.4% agreed, and 14.9% strongly agreed that they cross-reference news stories from multiple sources with different perspectives before forming an opinion (M = 3.14, SD = 1.154). Additionally, a significant proportion of students (37.6% disagreeing and 7.1% strongly disagreeing) reported that they do not make an effort to follow news sources outside of their personalized social media feeds (M = 2.92, SD = 1.163).

Furthermore, the data indicate that students may not consciously allocate time to explore news sources that represent a range of cultural, social, and geographic backgrounds, as only 22.3% agreed, and 11.0% strongly agreed with this statement (M = 2.87, SD = 1.201). Similarly, only 19.5% agreed, and 9.6% strongly agreed that they intentionally follow or subscribe to news sources that represent diverse viewpoints, even if they disagree with some of their viewpoints (M = 2.73, SD = 1.207).

Regarding the diversity of news sources and content creators encountered on social media, 19.1% of students agreed, and 4.6% strongly agreed that they come across a variety of political stances, which helps them understand multiple sides of an issue (M = 2.67, SD = 1.054).

However, a larger proportion (38.3% disagreeing and 11.3% strongly disagreeing) reported that they do not encounter such a diversity of perspectives on their social media feeds.

Also, respondents may not actively seek out sources with opposing viewpoints from their own when reading news online, as 39.4% disagreed, and 20.2% strongly disagreed with this practice ($M = 2.43$, $SD = 1.085$).

The study's findings show that while students generally recognize the significance of being exposed to diverse perspectives and viewpoints, they may not always actively seek out or engage with such content. This highlights the need for increased awareness and education on the value of media literacy and critical consumption of news sources, particularly in the context of personalized online news experiences.

4.8. Normality Test

Normality tests are utilized to determine if a survey data set is well distributed across subjects by a normal distribution curve or plots. Normal data, the result should fall approximately within a normal curve line, Gujarati (2002). thus, normality of data distribution is conducted, and the result of each dependent variable are as follows:

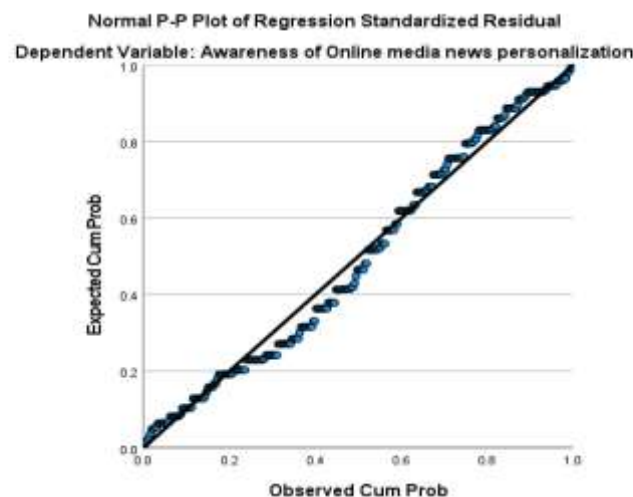


Figure 1.7: Normal Point Plot Standardized Residual

Source; -model output, 2024

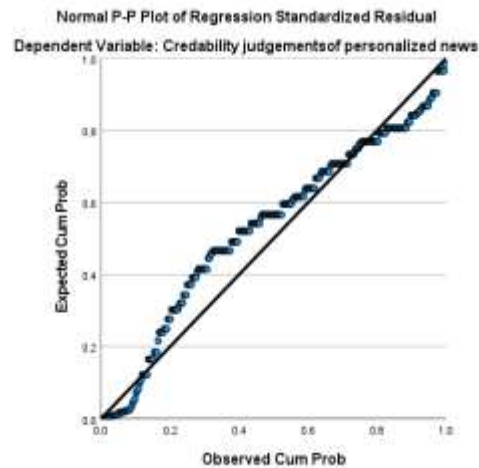


Figure 1.8: Normal Point Plot Standardized Residual

Source; -model output, 2024

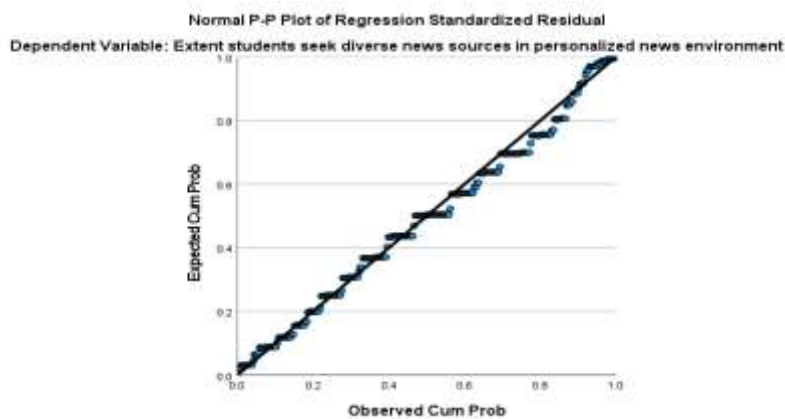


Figure 1.8 Normal Point Plot Standardized Residual

Source; -model output, 2024

The above Q-Q plot graph figures shows that the data's deviated from the line. Which means the more data is far from line the more it violates normality assumption. Accordingly, the above Q-Q plot indicate the data is violated the assumption of normality. Connected to this in order to do parametric analysis such as t-test, ANOVA and regression, the data must be fulfilled assumption of normality test. Thus' data was analyzed using a nonparametric test, which is not sensitive to normality and outliers.

4.9. Kruskal-Wallis Test Result

4.9.1. The Effects of Field of Study of Students on Awareness of Online Media News Personalization.

Table 2.4. Result of Kruskal-Wallis Test Result on Awareness of Online Media News Personalization.

Test Statistics ^{a,b}	
Awareness of Online media personalization	
Kruskal-Wallis	25.248
H	
Df	4
Asymp. Sig.	.000
a. Kruskal Wallis Test	
b. Grouping Variable: Department	

As presented in a Table 2.4, the Kruskal Wallis test revealed that there is a statistically significant difference in Awareness of Online media news personalization among the five departments ($H = 25.248$, $df = 4$, $p = .000$). Therefore, to further examine the specific differences between departments, post-hoc test analysis conducted utilizing pairwise comparisons was conducted using the Bonferroni correction for multiple tests. Moreover, interpreted as follows:

Table 2.5: Result of Kruskal-Wallis Test post-hoc test

Pairwise Comparisons of Department					
Sample 1-Sample 2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj. Sig. ^a
Law-Broadcast Journalism	30.033	21.702	1.384	.166	1.000
Law-Computer Science	-46.519	12.860	-3.617	.000	.003
Law-Multimedia Journalism	51.644	28.980	1.782	.075	.747
Law-Software Engineering	-65.735	13.426	-4.896	.000	.000
Broadcast Journalism-Computer Science	-16.486	20.786	-.793	.428	1.000
Broadcast Journalism-Multimedia Journalism	-21.611	33.265	-.650	.516	1.000
Broadcast Journalism-Software Engineering	-35.702	21.141	-1.689	.091	.913

Computer Science-Multimedia Journalism	5.125	28.301	.181	.856	1.000
Computer Science-Software Engineering	-19.216	11.889	-1.616	.106	1.000
Multimedia Journalism-Software Engineering	-14.091	28.562	-.493	.622	1.000

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same. Asymptotic significances (2-sided tests) are displayed. The significance level is .050.

a. Significance values have been adjusted by the Bonferroni correction for multiple tests.

In the pairwise comparisons of Table 2.5, the Law department differed significantly from both the Computer Science and Software Engineering departments. The adjusted significance values of 0.003 and 0.000, respectively, are below the 0.05 threshold, suggesting that Law students differ in their propensity to be Aware of Online media news personalization compared to Computer Science and Software Engineering students.

However, the pairwise comparisons did not reveal any other significant differences between the remaining department pairs, as evidenced by the adjusted significance values exceeding the 0.05 threshold.

The finding of the study congruent with Gran et al.(2020) found out education difference is strongly associated with algorithm awareness. However, in the current study the difference is only seen in relation to Law to Computer Science and Software Engineering Department students.

4.9.2. The Effects of Field of Study of Students on Credibility Judgments of Personal News.

Table 2.6. Result of Kruskal-Wallis Test on Credibility judgments personal news.

Test Statistics	
Credibility judgments personal news	
Kruskal-Wallis H	12.896
Df	4
Asymp. Sig.	.012
a. Kruskal Wallis Test	
b. Grouping Variable: Department	

As presented in a Table 2.6, the Kruskal Wallis analysis indicates among the five departments, there is a significant difference in credibility judgments ($H = 12.896$, $df = 4$, $p = 0.012$). Therefore, to further examine the specific differences between departments, post-hoc test analysis conducted utilizing pairwise comparisons using the Bonferroni correction for multiple tests. Moreover, interpreted as follows:

Table 2.7. Result of Kruskal-Wallis Test post-hoc test

Pairwise Comparisons of Department					
Sample 1-Sample 2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj. Sig. ^a
Law-Multimedia Journalism	2.756	28.892	.095	.924	1.000
Law-Broadcast Journalism	6.868	21.637	.317	.751	1.000
Law-Computer Science	-15.956	12.821	-1.245	.213	1.000
Law-Software Engineering	-44.641	13.385	-3.335	.001	.009
Multimedia Journalism-Broadcast Journalism	4.111	33.164	.124	.901	1.000
Multimedia Journalism-Computer Science	-13.200	28.215	-.468	.640	1.000
Multimedia Journalism-Software Engineering	-41.884	28.476	-1.471	.141	1.000
Broadcast Journalism-Computer Science	-9.089	20.724	-.439	.661	1.000
Broadcast Journalism-Software Engineering	-37.773	21.077	-1.792	.073	.731
Computer Science-Software Engineering	-28.684	11.853	-2.420	.016	.155
Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same. Asymptotic significances (2-sided tests) are displayed. The significance level is .050.					
a. Significance values have been adjusted by the Bonferroni correction for multiple tests.					

The results showed a significant difference in credibility judgments between the Law and Software Engineering departments (Adj. Sig. = 0.009). Students from the Software

Engineering department exhibited lower credibility perceptions towards personalized news content compared to those from the Law department.

Furthermore, the data in Table 2.7 indicate that there were no other statistically significant differences in credibility judgments between the remaining department pairs, as evidenced by the adjusted significance values exceeding 0.05.

4.9.3. The Effects of Field of Study of Students on Extent student seek diverse news sources in personalized environment

Table 2.8: Result of Kruskal-Wallis Test on Credibility judgments personal news.

Test Statistics ^{a,b}	
Extent student seek diverse news sources in personalized environment	
Kruskal-Wallis H	13.007
Df	4
Asymp. Sig.	.011
a. Kruskal Wallis Test	
b. Grouping Variable: Department	

As presented in Table 2.8, the Kruskal Wallis test indicate that statistically there is significant difference among the five departments in the extent to which students seek diverse news sources in a personalized news environment. ($H = 13.007$, $df = 4$, $p = 0.011$). therefore, to further examine the specific differences between departments, post-hoc test analysis conducted utilizing pairwise comparisons using the Bonferroni correction for multiple tests. Moreover, interpreted as follows:

Table 2.9: Result of Kruskal-Wallis Test post-hoc test

Pairwise Comparisons of Department					
Sample 1-Sample 2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj. Sig. ^a
Law-Computer Science	-34.561	12.849	-2.690	.007	.072
Law-Software Engineering	-37.908	13.415	-2.826	.005	.047
Law-Broadcast Journalism	56.396	21.685	2.601	.009	.093
Law-Multimedia Journalism	59.229	28.957	2.045	.041	.408

Computer Science- Software Engineering	-3.347	11.879	-.282	.778	1.000
Computer Science- Broadcast Journalism	21.835	20.770	1.051	.293	1.000
Computer Science- Multimedia Journalism	24.668	28.278	.872	.383	1.000
Software Engineering- Broadcast Journalism	18.488	21.124	.875	.381	1.000
Software Engineering- Multimedia Journalism	21.321	28.539	.747	.455	1.000
Broadcast Journalism- Multimedia Journalism	-2.833	33.238	-.085	.932	1.000

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same.
Asymptotic significances (2-sided tests) are displayed. The significance level is .050.
a. Significance values have been adjusted by the Bonferroni correction for multiple tests.

In the pairwise comparisons of Table 2.9, the data indicate that the Law department differed significantly from both the Computer Science and Software Engineering departments. The adjusted significance value 0.047, is below the 0.05 threshold, suggesting that Law students differ in their propensity to seek diverse news sources compared to Computer Science and Software Engineering students.

However, the pairwise comparisons did not reveal any other significant differences between the remaining department pairs, as evidenced by the adjusted significance values exceeding the 0.05 threshold.

These findings indicate that students from different academic disciplines, particularly Law, Computer Science, and Software Engineering, exhibit varying behaviors and attitudes regarding seeking diverse news sources in personalized news environments. This variation could be attributed to factors such as the nature of their academic training, exposure to critical thinking, or awareness of algorithmic bias and data privacy concerns.

The findings highlight the importance of understanding the diverse perspectives and information-seeking behaviors of students from different academic backgrounds in the context of personalized news environments.

4.10. Qualitative Data Analysis

This section discusses the qualitative analysis of data gathered by semi-structured in-depth interviews. The data, originally collected in Amharic, was first transcribed into English. The

researcher then conducted a data-cleaning process to prepare the transcripts for the coding phase.

The analytical approach followed a thematic coding strategy. Using "NVivo 14 software," the researcher systematically coded the data, organizing the coded data into similar themes and eliminating any context of data that did not align with the study's objectives. The analysis was conducted on both data-driven themes emerging from the participants' responses and literature-driven themes.

The research includes participants from various departments and academic years, as well as both male and female respondents. To facilitate the analysis process, interview participants were assigned the code "P" during the reporting of findings.

4.10.1. Definition Of News and social media Frequently Used and The Purpose

Aligning with the research objectives, introduction questions were asked during in-depth interviews to understand how participants outside the journalism field define news. Additionally, all participants, including journalism students, were asked about the social media platforms they use and their purposes for using them. This was important because some platforms do not use personalization algorithms, and the main objective was to understand users' awareness of personalized news content.

The findings of the study show that, like most university students, the interview participants primarily use social media for news and entertainment purposes

(Kalogeropoulos, 2019). Only one Broadcast Journalism student mentioned radio as their main news source, with minimal social media usage. Most participants used the Telegram app, specifically the Tikvah Ethiopia channel, as their primary news platform. Some of the participants cited using YouTube, Facebook, and X platforms for news, utilizing YouTube and TikTok mostly for entertainment. While news was an integral part of their social media usage, consistent with prior research, it was often consumed unintentionally (Kümpel, 2019). This suggests that participants frequently encountered news content on social media without actively seeking it out.

Excluding journalism students, participants from other academic backgrounds were asked to define news. Nearly all of them described news as information that updates them on current events, from local to global. This question was intentionally asked to understand how

participants differentiate news from other content when responding to the main research questions on online news personalization.

Qualitative data analysis sheds light on the study in supporting consistency of participants responses on both quantitative and qualitative data. However, it is important to acknowledge certain limitations that arise when conducting qualitative data analysis through interviews. a time lag between data collection and analysis. This time lag can occur when participants take time to give interviews, based on their convenience. During this time, it is possible that participants have been exposed to the survey questionnaires and may have formed assumptions about the interview questions based on their participation in the survey. This could potentially lead to biased responses or a lack of spontaneity in the interview data.

4.11. Awareness of Online Media Data Collection and Content Personalization

4.11.1. Awareness Of the Types of User Data Collected by Social Media Platforms

Online media track their user's online activities based on the data they gather from users, they recommend news and other content on the user's news feeds (Pariser, 2011, p. 44). This study investigates Student's awareness of which types of data social media tracks from users and for what purpose they use the data. Analyzing interview excerpts from a representative student, the research reveals varying levels of awareness among the participants. Their awareness is limited to more visible elements, such as information on user profiles and online activities. In line with this in-depth interview participant from 3rd the Computer Science Department stated:

I think they have all information about us. Mostly, maybe if you have ever noticed on TikTok, for example, if I searched about shoes, I will see videos about shoes which are also suggested for me on YouTube. So, I think they track us, and they have so much information about us (P2, March, 2024).

The above data highlights that the participants have a good understanding of how social media personalized content and recommendations on user news feeds based on browsing and search history. However, the participant's understanding is limited to more visible data collection rather than a deeper comprehension of the full scope of user data that these platforms may have access to. Phrases like "all information about us" indicate a belief that the data collection goes beyond just browsing and search history. However, the participant does not elaborate on what other types of data may be collected. Similar to the previous participant's response interviewee from 2nd year Computer Science department expressed:

I think so. The reason is, if they don't track their users, they will not bring related issues with the news I have seen before. Not only this, but sometimes after I chat with the people around me, if they start to search for that topic, the topic also starts to appear on my news feed. So, probably I think there are some things which they track from their users (P3, March, 2024).

From the above data, it is possible to understand that, this participant also has a strong belief that social media platforms and technology companies are tracking and monitoring their users. Connecting this with the previous interpretation, the participant's statements indicate a deeper level of concern and suspicion about the scope of data collection by these technology companies. This suggests that both participants have a general awareness and unease about the pervasive nature of data collection and user tracking by social media and technology companies. Corresponding to above informants most of participants share related idea with P1 and P3 regarding, what data of user's online media track.

Conversely, a participant contends that social media platforms might not track user activities, citing:

I don't think the platform tracks its users' online activities. The reason is, when you want to open the platform, it does not need a password or username; it's simply openable and gives you videos directly on your news feed. So, I don't think YouTube collects data about users, but I don't know about other platforms (P4, March, March, 2024).

From the above explanation, it is possible to understand that Users' awareness of the types of data that social media platforms track can be influenced by the specific platform they use. Different platforms may track and utilize user data in different ways to personalize and suggest content in their news feeds.

In contrast to the limited awareness expressed in the previous responses, one respondent demonstrated a more understanding of data collection practices:

surly they track their users. For instance, they track previously with whom and whom did created connection on social media you used. We can take LinkedIn as example, due to now am Software Engineering student previously connection I made is with people around my field. Then in the next time when I logged, it asked me, are you interested to connect with this person who is connection of your somebody connection. So, this clearly show that they know whom you followed and what kind of person people you followed like to follow. This mean they understand people interest and their suggestion is based on information they collect about users (P1, March, 2024).

As can be inferred from the above data compared to other fields of studies included in this study, students from the Software Engineering field have a deeper, more comprehensive awareness of the data of users tracked by social media platforms. However, most students were aware that user data are tracked but could not mention a clear explanation of what kind of data social media gather from users.

Similar to the finding of this research, the study of Powers (2017) revealed that most students who search for news on social media use news personalization algorithms were aware that user data are collected but could not mention specific examples.

4.11.2. Awareness of News Personalization

This study explores user awareness of how social media curates' content in their news feeds. To avoid prompting participants, the researcher did not use the words "algorithm" or user data collected by online media for news suggestions on the user's feed. A central theme emerging from the interviews highlights that the personalization of news and other content on online media is connected to the content that users click on and engage with repeatedly. In line with this, only two participants mentioned the word algorithm:

They suggest news based on what many people gave like reaction, but most of the time, using an algorithm based on what you have liked, they recommend news. For example, if I see some kind of news, they suggest related news that I have seen previously (P2, March, 2024).

The data presented above show that students are generally aware that social media platforms employ algorithms to track user activities. However, participants were unable to provide detailed explanations regarding the specific types of user data that are collected and utilized by these algorithms to personalize content to individual interests. Similarly, another in-depth interviewee stated the scenario as follows:

They depend on studying about your interest. Using algorithm, they collect information about on what topic you previously spent much of your time. Then, they suggest you, contents related to what you have spent much of your time on your news feed. If you scroll and skip it without giving to time to it, algorithm understand as it's not your interest. So, contents of your interest are contents you seen previously and contents you spent much of your time on it. Thus, what comes on our news feed is whether its news or other contents, the contents related to your previous interaction (P1, March, 2024).

From the above statements, it is possible to deduce that users have an awareness of the data that social media platforms track about them. However, this awareness is limited to the content that users spend significant time engaging with. The participants did not explain in detail the other types of data that social media platforms use algorithms to track in order to personalize and recommend content on users' news feeds. While the participants did not explicitly mention the word "algorithm," other interviewees referenced different data points those social media platforms track from users to suggest content. In this case, in-depth interview, participant P4 stated that "social media personalizes content based on a user's subscriptions." At the same time, another respondent, P5, mentioned "content related to your interests, which you have liked or commented on." This highlights that users' awareness of social media personalization systems use users' content engagements and subscriptions. Additionally, one participant made the following explanation:

Even though I'm not sure how they do it, I mostly see content related to my interests. For example, after I read something and think about it, it suggests content related to what I was thinking about (P6, March, 2024).

The above data show that, the participant does not have an awareness of how social media curation content to individual interests. At the same time, they are suspicious of related content to the interests they see on their news feed. Regarding how social media personalize to individual interests on their news feed, only one participant of the in-depth interviewee responded with detailed information:

On Facebook, mostly I see news stories and articles that are shared by the pages or people I follow. It seems to content that is popular or engaging with my network. Regarding website news, I'm not entirely sure how it curates the stories, but it seems to show me articles based on my general interests and reading history (P8, March, 2024).

The data suggests that the respondent has a limited understanding of how content is curated on social media and news websites. While they recognize that their network and interests influence the content they see, they lack a clear explanation of the algorithms providing content curation. This indicates a similar gap in user awareness of the technical processes shaping their online experiences, highlighting the need for digital literacy around content selection on various digital media platforms.

Furthermore, one participant elaborated what they experienced in personalization of online media news as follows:

Recently we were talking about a phone with my brother; The phone is called the Google Pixel. At that time, I did not search for that phone, and I was not thinking about buying it, but he and my sister searched for that phone on their phones. Then around the night, the advertisement notification about the Google Pixel phone started to come on my phone. However, during those times, since there was no news covered about the phone named Google Pixel, it's hard to guess whether the news is new. Others also, after I talk about some joke over social media with my friends, the topic related to that joke started to appear on my news feed, especially on Instagram (P3, March, 2024).

This data indicates that users experienced personalization of content related to what their connection chatted about, but they are adequately unaware of how news content is personalized to their interests.

Connected to this research findings, Schmidt et al. (2019) found that, most users in the study were somewhat aware of the existence and approximate mechanisms of personalization. However, not all users directly linked prioritization and personalization with the algorithm in detail. Similarly study by Swart (2021) supports this research, presenting that young people's awareness of how social media platforms personalize content on their news feeds varied significantly. Some participants had never heard of the term "algorithm," while others could describe in detail the processes of categorization, profiling, and personalization carried out by algorithms.

4.11.3. Awareness Of Factors Influencing Visibility of News Stories on Social Media

This study explores young students' awareness of the factors that influence the visibility of news sources on social media platforms.

The focus of this part of the study is on why some news stories are shown more or less visibly on the internet or social media, and if two people search with the same terms on Google, would they see identical results? Additionally, the study explores whether users see all posts from the channels or pages they follow on social media. In line with this, P4 stated, "I don't really know, but I guess most of the time on YouTube its related to what channel we have subscribed to". Similarly, another in-depth interviewee, participant P8, further elaborated on the scenario, stating: "I'm not really sure about the way online medias prioritize contents, but I think it has connection with the popularity of the story". The above data, indicate that users do not have much awareness regarding news stories which seen more or less visibly on their news feeds. Another interviewee expressed a similar explanation of uncertainty, remarking:

Firstly, I think when news channels broadcast their news, they see which news gets the most views, but this cannot work all the time. Sometimes on important issues, they broadcast news whether people watch it or not. For example, sometimes if a news topic was trending during those times, the news related to that topic is highly visible on the news feeds. So, I think they prioritize news by seeing the number of viewers for their news and based on what users searched for during those times (P3, March, 2024).

From the above response, it is possible to understand that students are unaware of how some stories get high visibility and are preferred over others on the news feed.

Similarly, Eslami et al. (2015) revealed that, , more than half of the participants were not aware algorithmic news curation existence at all.

Furthermore, the study explores the students' awareness regarding whether they see similar content in their news feeds compared to their friends, as well as whether two people searching with the same terms would see the same content. Moreover, the theme that emerged from the interview shows that the participants have a moderate level of awareness of these issues. Connected to this, an interviewee respondent from Computer Science highlights: "I think on Google we will see the same results because Google responds with the best-viewed results from Wikipedia and other sources." The data show that user perception regarding contents retrieved from Google with the same terms for two users is far from what is on the ground.

Colorizing the above data, P5 and P6 also displayed a moderate awareness of the issue. One interviewee explained that 'even though the specific words retrieved from Google may differ between users, the underlying answers are often quite similar.' This suggests that the students do not have a comprehensive understanding of how personalized search results can be, even for the same search request. In another in-depth interview, P7 explained, "I think so. If two people search with exact the same terms, their result is also the same."

In contrast to the above response one respondent emphasized:

They do have difference. Even though we search with the same terms but our previous searching is matter, due to they know our searching trained. For example, when we searched with the same terms one person may see many retrieves with few second and the other may see only few results due to, they know our interest based on what we have searched before. So more of it depend on our preference and on what we have engaged before (P1, March, 2024).

The participant has a more developed understanding of the complex, user-specific factors shaping content visibility and ranking in online search, in contrast to the general misconceptions highlighted.

For the interview data regarding whether participants see similar content in their news feeds with their friends or family members on the same social media platforms, most of the in-depth interview participants displayed a similar level of awareness. Except for one respondent, P4, "I think we will see the same contents." This response suggests that this particular participant does not have a comprehensive awareness of how personalization algorithms can lead to differences in the content displayed to connected users on the same platforms.

Regarding the interview question about whether participants see all news stories posted by the channels or pages they follow on social media, the majority of interviewees believed that they do see all of the content from the page or channel they follow on social media.

In line with this, one in-depth interview respondent, P6, stated: "Due to the fact that I follow them and see their content so many times, all the content they post should come on my news feed. However, it does not doesn't work all the time." This response suggests that the participant has less awareness about the algorithms that curate social media feeds and that they may not see all posts from the channels and pages they follow.

Moreover, P5 shared a similar level of awareness, emphasizing: "Yes, they give me all the content on my news feed based on my subscriptions when they have new information." This statement further illustrates the participants' belief that they are shown all posts from their followed sources despite the reality of algorithmic curation.

The contrast between the interviewees' expectations and the actual workings of social media algorithms points to a general lack of awareness among the participants regarding the factors that determine content visibility in their news feeds.

In contrast, P1 and P2 stated: "No, likely may not become all of them. However, contents I have seen again and again would come" and "no, they will not show all contents. I am not sure, but I think if a story gets the most likes or when they post some recent news compared to my online time". Moreover, another in-depth interview respondent mentioned:

No, not all. For example, I mostly use YouTube; on Telegram most of the time since I use it for communication, most of the time, I will not see content come on Telegram. But on YouTube, as long as I turn on the notification, it will come to me, but if I turn it off, it will come inside the channel, but I will not see the notification (P3, March, 2024).

The above data suggests that while some participants, particularly those in technical fields, have a more nuanced awareness of how social media algorithms curate content, their level of awareness can also be influenced by the specific platforms they use and their personal settings and engagement patterns on those platforms.

In contrast to this study finding, the research conducted by Powers (2017) found out, college students are generally unaware of the extent to which contents they see on social media platforms may filter the content they see in their news feeds.

4.12. Perceptions Of Social Media News Personalization.

4.12.1. User Perception and Feeling Toward Personalized Contents

This study explores users' perceptions and feelings about algorithmically personalized news content. Utilizing excerpts from interviews with a representative student, the research examines students' feelings and perceptions toward algorithmically curated content. A central theme emerging from the interviews is that they have pleasant feelings about automatically recommended content with some minor frustrations.

Algorithmic content curation invoked a range of reflections and feelings from the interviewees, including both positive and negative reactions. On the one hand, many participants experienced a sense of being recognized by algorithms as pleasant. In connection to this, interviewee P8 mentions, "When I see news or articles about topics, I've previously shown interest in, I generally feel pleased. It feels like the platform understands my preferences and saves me the effort of actively searching for that kind of content". This response suggests that for some users, the personalized recommendations aligned with their interests, leading to a positive perception of the algorithmically curated news content. The participant seems to appreciate the convenience and relevance of having content tailored to their preferences.

Respondent P6 supported this with a positive sentiment towards algorithmically curated news content, stating: "When they give me content related to my interests, I think they understand people's interests. They gain acceptance when they understand people's interests, so they

always focus on people's interests." The interview data suggests that across different academic backgrounds, many participants appreciated the personalized recommendations that aligned with their prior interests and engagement.

However, a minority of respondents shared that even though they initially appreciate personalized content, when the platforms continue to reinforce those patterns, they can develop negative feelings. As one participant stated:

Sometimes you become tired of because it brings the same contents again and again you know other trends and make you annoyed by making you to see only few things and narrow your scope. That make me angry due it put me in the same cycle (P1, March, 2024).

From the above data it's possible to understand that students feel annoyed when personalization always become their daily routine.

Complementing the above idea, another in-depth interviewee further explained:

Depending on the time, if I see content related to my interests, I feel happy. But sometimes, they suggest your old posts, which already become dead issues, and on such occasions, it frustrates me to repeatedly put me on the same cycle with the same content (P5, March, 2024).

From the above response, it is possible to comprehend that, social media sometimes suggests contents users already read or seen it. Which make them frustrated. Moreover, this respondent aware age of news which could exposure of being Journalism School student.

Furthermore, one in-depth participant expressed concerns about the privacy implications of personalized recommendations, stating:

sometimes without thinking, I mean even though I did not actively search for some topic by myself, after you chat about the issues with people when it starts to come on my phone, it makes me worry. I mean, I would start to think about how they suggested it to me by relating it to my interest, because it's not me who searched for this topic. So why did this come on my news feed? not only this, but also whether they track our search history only or if they can collect other information about us makes me suspicious (P3, March, 2024).

The study found out that range of user attitudes, with both appreciation and frustration towards algorithmic curation, as well as underlying privacy concerns. While many participants valued the personalized relevance, the repetition of content and perceived surveillance aspects could also lead to negative perceptions.

Strengthening the finding of this research Swart (2021) found out while most users feel recommendation system as benefit, some times, algorithms perceive strongly negative emotions.

4.12.2. Relevancy Of Personalized News to User Interest.

This study explores relevancy of personalized news contents to user interest. Utilizing interview excerpts from a representative student, the research explores how users perceive relevancy of automatically recommended news on their news feed. A central theme emerging from the interviews were both positive and negative perception toward relevancy. In line with this interview participants P4 and P8 Stated that news story they see on their news feed are relevant to their interest.

In contrast, data from participants P2 indicated that ‘if you watched one video and if you follow someone's page, related content posted by other pages also comes to your news feed, which is irrelevant to my interest.’ Social media recommend news contents of user interest based on the data they tracked from users, but for users who are new to the platform, the recommendation may not align with their interests. In line with this one interviewee participant mentioned the following:

when I changed accounts and started to use a new account. On the first time, there were occasions where the content that was not related to my interests came on my news feed. For example, for the first time when I opened YouTube with a new Gmail account, such contents not related to my interest appeared on my news feed. I think after some time passed, it started to show content of my interest (P3, March, 2024).

The above data reveals that social media platforms fail to recommend content that is relevant to user interests, especially for new users.

Accordingly, the study finding show that most user feel contents of news they see on their news feed are relevant to their interest. While minor respondent feel social media news suggestion by expectation of user may like this with their previous engagement failed to meet their interest and even algorithm lack in providing relevant information for user who started to use social media for the first time.

Supporting the finding of this study, Swart (2021) study revealed that, young people mainly perceive as personalized news the benefit them with recommender systems, such as saving time and giving them contents of their interest.

4.13. Algorithmically Curated News Content Credibility Judgment

This study explores how students judge credibility of online news recommended automatically on their news feed. The study used interview excerpts from a representative student to highlight trust level students put on algorithmically personalized news. A central theme emerging from the interviews they are skeptical in judging credibility of online news. In line with this study one in depth interview participant stated:

I believe they are reliable information when they provide videos with news articles. However, there are many ways to create deep fake videos, so there is no way to differentiate fake news from credible news. So, I guess by myself (P6, March, 2024).

From the above data one can see that even though the respondent is from Multimedia journalism stream how they judge credibility of news show that they have inadequate digital literacy. Similarly, P8 expressed “I filter it in my guess with my heart and mind. Also, I ask my friends about the truthfulness of information”. This indicate that students are far from digital literacy. Supporting above data, P4 shared “I see prominence of any information disseminators over you tube, do they show their face etc. are issues I considered to check credibility of any information”.

Moreover, student P4 shows low level digital literacy: “When I see some news that I want to watch, first I check other related channels. Even after I listen to it, I don't rush to judgment”.

Furthermore, the study found that skeptically they don't check other platform for news. Connected to this P1 explained “I have few selective news sources out of that news contents I see on YouTube and Tik Tok I do not count them as a news I just count them as they are rumor or gossip”. However, P5 express different judgment Idea to above data's:

I will check the information's source, its truth, and where it came from. Some people may trust news stories with many likes, but that's not the case. People with few likes and followers can also post credible information, so I do not depend on the number of followers and likes. For the same topic, I check more than one source.

The above data show that only few students critically judge credibility of algorithmically recommended new.

Also, P2, to some extent share similar digital literacy level: “I check the prominence of the page that posted it. also, I check the number of followers too. And also, I check on other credible channels, for example, like Tikvah Ethiopia and EBC's official channel”. This

indicates judgment they give to online news credibility more of focused on common sense. Another data shared by P3 support above data:

Firstly, I search on Google, and if I see the same content on Google, secondly, I see the channel which posted that news. For example, most of the time I use Tikvah. From the day I started to use Tikvah and still now, I have never seen any fake information. So as long as the information is posted on these two, I believe that the news is credible. But if the news is posted elsewhere, I will see whether that news is posted on Google and Tikvah. if I don't see it on Tikvah, I don't trust that particular news.

4.13.1. The Influence of Preexisting Belief and Emotion Resonance Credibility Judgments of Personalized News.

This study explores the challenges faced by students in Judging credibility of news personalized to their news feed related to their pre exit belief. A central theme emerging from the interviews is mostly strength students preexist belief with some skeptical students. Connected to this when students encounter news content that aligns with their pre-existing beliefs, they tend to perceive it as more credible, without necessarily subjecting it to rigorous scrutiny. As participant P5 states, "When social media recommends content that aligns with my beliefs, even my belief in that issue would increase." This shows the influence of confirmation bias, where individuals are more inclined to accept information that reinforces their existing views, rather than critically evaluating its credibility.

The interviews also reveal that the emotional connection students have with news content related to their beliefs can influence their credibility judgments. As participant P6 indicates, "when I encounter news related to my beliefs, as it is part of my life, it touches my emotions. Due to that, most of the time when I see content related to my viewpoint, I perceive it as credible news." This emotional resonance can override the need for objective, evidence-based evaluation of the news content.

While the majority of participants seemed to force to the influence of pre-existing beliefs on credibility judgments, some of them shows a more understanding of the issue. Regarding this Participant P8 acknowledged the initial receptiveness to news aligning with their interests or beliefs but also expressed a willingness to "evaluate its credibility based on factors like the source, evidence, and unbiased reporting." Similarly, participant P2 noted the need to actively search for and verify the credibility of news, rather than accepting it at face value.

The data also suggests that age and digital literacy may play a role in how students see the credibility of personalized news content. As participant P2 stated, "I think it depends on age, for example, what looks truthful to my mother may not be the same for me as a young person in society who can easily identify it." This highlights the importance of digital media literacy education in helping students develop critical thinking skills to navigate the complex online information landscape.

On the other hand, Participant P4's cited, "The current condition of our country puts everyone from their own groups and society. This also challenges me not to accept it as credible, but I try to see it from each side," this pointed to suggestion that the broader societal context of polarization can further complicate the process of credibility judgment, making it more challenging for students to maintain an objective and balanced perspective.

The findings of the study highlight the need for media literacy interventions that address confirmation bias, emotional processing of information, and the development of critical thinking skills to navigate the complexities of the digital information landscape. Additionally, the role of age, digital literacy, and societal polarization in shaping credibility perceptions warrants further exploration and understanding.

4.13.2. Factor Influencing User Perceptions of Online News Credibility

This study explores the factors students consider in doubting the news which its credibility is questionable. The data suggests that students often encounter news coverage which its credibility is questionable to them. Connected to this study as participant P3 states, "the news connected to political issues, on some channels, it posts with one perspective, and on other channels with another perspective. On such things, there are things that make me confused." This observation highlights the challenge students face in navigating the polarized nature of political discourse in the digital media landscape.

The interviews also reveal that students are particularly skeptical of health-related news content, which they perceive as often being contradictory or lacking scientific evidence. Participant P3 provides an example of encountering news stories that offer conflicting advice, such as "don't do this" and "do this," which undermines their confidence in the credibility of the information.

Several participants expressed concerns about news content that appears to be exaggerated or inaccurate, particularly regarding the reporting of numbers and statistics. Participant P5 shared

examples of news reports that inflated the number of deaths or misrepresented the scale of a project, which led to doubts about the credibility of the information.

The data also suggests that students are more likely to question the credibility of news content from sources they perceive as unfamiliar or unofficial, such as websites with few subscribers. As participant P2 noted, "they didn't look like sensible contents, and also, they were from unofficial websites, like those who do not have many subscribers."

Participants also expressed skepticism towards news content that appeared to be sensationalized or presented information that seemed implausible or impossible to believe. Participant P4 provided the example of "questionable news" on YouTube regarding a civil war, which they found difficult to accept as credible.

Additionally, the data indicates that students are more likely to doubt the credibility of news content when they are unable to find the same information or verification on other credible websites. As participant P2 mentioned, "when we checked on the credible websites, we did not find such kinds of news."

These findings highlight the various factors that contribute to students' doubts about the credibility of online news content, including political biases, inaccurate or exaggerated reporting, unfamiliar sources, sensationalized content, and lack of corroborating evidence. These insights underscore the importance of developing critical thinking and media literacy skills to navigate the complex and often challenging digital information landscape.

Supporting this study Wineburg and McGrew (2017) investigated how students evaluate online information and found that they often struggle to distinguish between credible and non-credible sources, particularly when the content aligns with their preexisting beliefs. This aligns with the observations from the qualitative data.

4.14. Extent of Seeking Diverse Perspectives in Online News

This study explores the diverse news sources and contents consumptions of students. The interview data showed a mixed picture regarding the extent to which students seek out diverse perspectives and viewpoints in their personalized online news sources. Connected to this While some participants express an interest to engage with diverse viewpoints, particularly connected to religious topics, others seem more inclined to gravitate towards content that aligns with their existing beliefs and interests. In line with this Participant P1 indicates a proactive approach to seeking diverse perspectives, noting that:

of course, due to I want diversified contents and to not narrow my view point purposively I delete and clear catchy of my social media history they collected from my activity when I clear it start to bring and suggest contents in a new way and I always do its after I used social media (p1 March, 2024).

This suggests a conscious effort to expose themselves to a wider range of perspectives. Similarly, participant P5 acknowledges actively searching for information about other religions to better understand different belief systems “mostly, I search for different viewpoints regarding religion. For instance, the religion I believe in is Islam, but I search to understand what other religions are about”.

However, a significant number of participants express a more passive or disinterested approach to seeking diverse viewpoints. Participant P6 states that they never did search for differing perspectives, while participant P2 suggests that they only search for news on topics that are widely discussed, rather than actively seeking out alternative viewpoints. Participant P8 further reinforces this tendency, admitting to gravitating towards news content that aligns with their interests and viewpoints and simply scrolling down and skipping content that differs from their perspective.

The data also suggests that some students may be more receptive to diverse perspectives on certain topics, such as religion, while maintaining a more selective approach to political and other news coverage. In this case participant P7 notes that “regrading news I never did search, but I did on religious issues which is different from my religion.”

These findings highlight that regarding news some students actively seeking out diverse perspectives, while most of them prefer the familiarity of content that reinforces their existing beliefs and opinions. The data suggests that the extent to which students engage with diverse viewpoints may vary depending on the specific topic or context, as well as individual preferences and digital literacy skills.

In line with this study, a research conducted by Haim et al. (2017) found out that no support for polarization of users in news consumption.

4.14.1. Responses To Contradictory News Perspectives

The interview data also provides insights into how students respond when they encounter news stories or perspectives that challenge or contradict their existing beliefs and opinions. The responses reveal a range of strategies and reactions, with some participants demonstrating a more open-minded approach, while others exhibit a more defensive or avoidant stance.

Several participants express a tendency to simply ignore or dismiss content that contradicts their beliefs. Participant P1 states that “when I see contents opposite to my viewpoint, I don’t spend any time on it simply I skip when I noticed its different from my view point.” Similarly, participant P7 notes that “They difference to my viewpoint is doesn’t matter but based on my preexist belief if I perceive fake totally, I ignore it even I do not check it for a while.” This suggests a reluctance to engage with or critically evaluate information that challenges their preexisting beliefs.

In contrast, some participants indicate a willingness to consider different perspectives, albeit with certain caveats. In line with this participant P5, for instance, acknowledges that "there are things that I believe in and things that I don't believe in. But when I see content that differs from my perspective, I don't mindlessly reject it. First, I check it to know if I need to correct it or if they are evil before taking action." This suggests a more open-minded and thoughtful approach to evaluating the credibility of challenging information.

Participant P2 further elaborates on their strategy, stating that “I try to make them not recommend me such contents”. This indicates an attempt to curate their information environment by actively manipulating the algorithms that personalize their news feeds, rather than simply ignoring or dismissing the content outright.

The data also suggests that the extent to which students engage with contradictory perspectives may depend on the specific topic or context. Participant P2 notes that they "will not see content different from them" in general, but if they feel that the content "makes them worry completely," they will adjust their settings to avoid further recommendations of that content.

These findings highlight the diverse approaches students take when confronted with news perspectives that challenge their existing beliefs and opinions. While some exhibit a more closed-off or avoidant response, others demonstrate a more nuanced and open-minded approach, suggesting the potential for cultivating critical thinking and media literacy skills to navigate the complexities of the digital information landscape.

CHAPTER FIVE

5. SUMMARY, CONCLUSIONS RECOMMENDATIONS

This chapter deals with summary of the major findings, the conclusion drawn from the findings and recommendations of the study. In the first section, a summary of the general study and the major findings was presented. Then, conclusions drawn from the findings were made. Finally possible recommendations were given based on the major findings of the study.

5.1. Summary

The primary objective of this study was to assess the awareness of Addis Ababa University (AAU) students regarding personalized online news, specifically in terms of credibility and diversity of news sources. The study aimed to answer the following research questions:

1. What is the level of awareness among AAU students regarding social media platforms' data collection and use of user data to personalize content and determine priority in their news feeds?
2. What do AAU students perceive when they see content related to their pervious activities on their news feeds?
3. How do Addis Ababa University students judge the credibility of news sources that are recommended automatically on their social media news sources?
4. To what extent do AAU students seek out diverse perspectives and viewpoints in personalized online news sources?

This study investigated awareness of AAU students on personalized online news in terms of credibility and news source and content diversity. Employed a mixed-methods approach, combining quantitative surveys and qualitative interviews to comprehensively explore the research questions.

On the awareness of social media user data collection and content personalization to user interests, the findings show that AAU students have a mixed level of awareness regarding how social media platforms collect user data and personalize news content. While many students are aware that they frequently encounter personalized content and know that social media tracks their online activities, they lack a comprehensive understanding of the underlying algorithms and the specific types of user data collected for personalization purposes.

The quantitative data indicates that a significant proportion of students do not fully comprehend how social media personalizes their news feeds. The qualitative data further corroborates this finding, revealing that students have limited awareness of the technical processes shaping their online experiences, often citing visible data points such as browsing history, search queries, and content engagement as the basis for personalization.

Regarding students' perceptions of personalized news content, the study's findings demonstrate that AAU students hold varying perceptions and feelings towards personalized news content related to their previous online activities. While a majority find the personalized content relevant to their interests, a notable proportion expresses negative sentiments. The qualitative data supports these findings, highlighting that while many students appreciate the convenience and relevance of personalized recommendations, some also experience frustration when the personalization becomes too narrow or repetitive.

Concerning the credibility judgments of automatically recommended news sources, the quantitative data shows that a majority of students disagree or strongly disagree with statements regarding the accuracy, objectivity, and research quality of personalized news content. The qualitative data further reinforces these findings, with participants expressing doubts about the credibility of personalized news, exaggerated or sensationalized reporting, and unfamiliar sources. The data also highlights the influence of preexisting beliefs and emotional resonance on credibility judgments, as well as the challenges posed by polarized media landscapes and a lack of digital literacy skills.

Furthermore, the study revealed mixed findings regarding the extent to which AAU students seek out diverse perspectives and viewpoints in their personalized online news sources. While some students express an interest in engaging with diverse viewpoints, particularly on religious topics, others gravitate towards content that aligns with their existing beliefs and interests.

The qualitative data suggests that some students actively seek out diverse perspectives by clearing their browsing history or searching for information on different religions. However, a significant number of participants exhibit a more passive or disinterested approach, preferring the familiarity of content that reinforces their beliefs.

5.2. Conclusions

This study shed light on level of awareness AAU students have on personalized news focus on credibility and content diversity. Utilizing, a mixed approach that merge survey and interview, the study explored awareness students have on system social media use to curate news on their news feed.

The findings paint a concerning picture: while many students recognize that they frequently encounter personalized content and understand that their online activities are tracked, they lack a comprehensive understanding of the underlying algorithms and the specific types of user data collected for personalization purposes. This highlights the need for increased education and awareness campaigns to empower students to make more informed decisions about their online engagement and data privacy.

moreover, while a majority appreciated the relevance and convenience of personalized recommendations aligned with their interests, a notable proportion expressed negative feeling. This suggests that the negative perception of personalized news content among AAU students is relatively low.

students employ a multi-faceted approach to assessing the credibility of news content recommended to them on social media. They rely on a combination of social proof, user ratings, publisher reputation, and personal belief alignment while also acknowledging the importance of fact-checking and cross-referencing information from multiple sources. This indicates that students value the collective judgments of other users when determining the credibility of recommended news.

The study revealed mixed findings regarding the extent to which AAU students seek out diverse perspectives and viewpoints in their personalized online news sources. While some students expressed an interest in engaging with diverse viewpoints, particularly on religious topics, others gravitated towards content that aligned with their existing beliefs and interests. This highlights the need for increased awareness and education on the value of media literacy and critical consumption of news sources, particularly in the context of personalized online news experiences.

5.3. Recommendations

Based on the findings and conclusions of this study, the following recommendations are proposed:

- ❖ Social media platforms should prioritize transparency about their user data collection practices, personalization algorithms, and content recommendation systems.
- ❖ Educational institutions should collaborate with social media experts, researchers, and industry professionals to develop educational resources and training programs tailored to the needs and concerns of students regarding personalized online news.
- ❖ Institutions should encourage students to seek out diverse viewpoints and engage with a wide range of news sources, fostering an environment that values open discourse and critical thinking.
- ❖ Governments and regulatory bodies should closely monitor the practices of social media platforms and consider implementing policies or guidelines to ensure transparency, user privacy protection, and responsible content moderation practices related to personalized news.
- ❖ Social media experts and researchers in the field of media and communication should actively conduct studies and analyses to better understand the impact of personalized online news on various aspects, such as public discourse, political polarization, and the spread of misinformation.
- ❖ Providing users with clear information on what data is being collected and how it is being used can help build trust and alleviate concerns
- ❖ Creating awareness on importance of diverse news sources and content for students

By implementing these social media platforms can enhance user satisfaction, trust, and engagement while addressing concerns related to data privacy, content relevancy, and credibility. Moreover, media outlets, and other stakeholders can collaborate to cultivate a more informed and resilient society capable of navigating the complexities of personalized online news environments while upholding the principles of credibility and diversity.

6. References

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7. APPENDIX

APPENDIX A

ADDIS ABABA UNIVERSITY MA PROGRAM IN MULTIMEDIA JOURNALISM

Questionnaire for Addis Ababa University Students

Purpose: The purpose of this questionnaire is to collect data for research entitled: “Awareness of AAU Students on Personalized Online News: In terms of Credibility and Diversity of News Sources.” Your response will add value to the successful completion of this research. The information will be used for academic purposes only. Your response is anonymous and confidential. Therefore, please take some minutes of your expensive time to fill out this questionnaire and return it as soon as possible.

Thank you in advance for your valuable time and cooperation!

If you need clarification or have any questions, you can contact me at:

felmata.mahammed@aau.edu.et or by telephone number +251940572738)

SECTION I: DEMOGRAPHIC INFORMATION

Answer the following demographic information with a tick mark.

1. Gender

Male ☐ Female ☐ Prefer not to say ☐

2. Age

19-25 ☐ 26-30 ☐ and above ☐

3. What is your academic department? _____

4. Which year are you currently in?

2nd ☐ 3rd ☐ 4th ☐

5. Which social media platforms do you use most frequently? Please select all that apply.

Facebook ☐ YouTube ☐ Tik Tok ☐ Instagram ☐ LinkedIn ☐

Others _____

6. On average, how much time do you spend on social media platforms per day?

A. Less than 1 hour B. 1-2 hours C. 2-3 hours D. More than 3 hours

Section II: Students Awareness on Personalized Online News sources (social media)

Direction: In the following set of questions, think of your awareness of how social medias prioritize and suggest news (contents) on your news feeds. Indicate your response by encircling the number corresponding to the degree of your awareness. by using the scale of 1-5 where; 1 for Strongly Disagree (SD), 2 Disagree (D), 3 Neutral (N), 4 Agree (A) and 5 Strongly Agree (SA).

No	Items	SA	A	N	D	SD
Awareness of News selection and Personalization of online Media						
7.	I know that when I use social media platforms like Facebook, YouTube, Google, TikTok, etc., these platforms collect data about me.	5	4	3	2	1
8.	I understand the types of user data being collected by social media.	5	4	3	2	1
9.	I know the reasons why social media platforms collect data about their users.	5	4	3	2	1
10.	I review the privacy policies of social media platforms I use.	5	4	3	2	1
11.	I adjust social media privacy settings and customize it manually	5	4	3	2	1
12.	I know why different websites collect cookies.	5	4	3	2	1
13.	I accept when websites asked me to accept or reject their cookies	5	4	3	2	1
14.	I know that social media platforms personalize the news (contents) I see on my social media news feeds, based on my past interactions and previous activities over social medias.	5	4	3	2	1
15.	I know that the news suggested to me on social media is personalized to my interests.	5	4	3	2	1
16.	I know how social media personalize my news feeds.	5	4	3	2	1
17.	I frequently encounter personalized content on social media that aligns with my interests and contents related to my previous consumption.	5	4	3	2	1

Section III: Perceptions on personalized online media contents

Direction: In the following set of questions, consider the content you encounter (see) on platforms such as Facebook news feed, YouTube, Tik Tok, Google News suggestions, notifications on your device, or LinkedIn news feed?

Please indicate your response by writing a number in the 'code' column that corresponds to the degree of your perception.

No.	Items	Choices	Code
User Perception on Personalized Online news			

18.	What factors do you believe affect either the types of news you encounter on your social media news feed and the order in which posts are displayed? (Please select all that apply)	1. My action. 2. My social media profile information. 2.Action my friends take. 3.Action people I don't know take. 4. I'm unsure. 5. Other_____	/...../
19.	Do you find it helpful, or relevant when your social media platforms display content related to your browsing history and online activities?	1. Yes, I find it relevant. 2. Somewhat relevant. 3. No, I don't find it relevant. 4. Not relevant at all	/...../
20.	When you see news articles or video contents in your social media news feed related to websites you've previously visited or activities you've engaged in online, how does that make you feel?	1. Happy to see more information about topics I'm interested in 2. I just skim extra coverage on familiar topics. 3. Somewhat Annoyed to see repetitive content. 4. Frustrated to see news or content on the same topic. 4. Other_____	/...../
21.	When you come across another article about a topic you've read or watched about before in your news feed, how likely are you to read or watch it?	1. Very likely 2. Somewhat likely 3. Neutral 4. Not very likely 5. Not likely at all	/...../
22.	In what ways do you think seeing news related to your previous consumption on your news feed influences your perception of the social media platforms you use?	1. Increases my trust in the platform 2. Makes me more engaged with the platform 3. Makes me question the platform's privacy policies 4. Does not influence my perception 5. Other_____	/...../

Section III: Awareness of automatically recommended online News Credibility

Direction: In the following set of questions, think of news suggested to you on your phone as notification from google or YouTube and news feeds you see when you log in on your Facebook account and other social medias.

How well the following sentences describes you?

To what extent do you agree or disagree with the following sentences?

No	Items	SA	A	N	D	SD
	Credibility Perceptions on contents recommended on News feed					
23.	Automatically recommended news comes on my social media news feed are accurate and trustworthy.	5	4	3	2	1

24.	I believe that the automatically recommended social media news and content I see are unbiased and balanced.	5	4	3	2	1
25.	I am confident that automatically recommended social media news and content are often from credible sources.	5	4	3	2	1
26.	I perceive that the automatically recommended social media news and content I encounter are well-researched and fact-checked.	5	4	3	2	1
27.	I believe the news stories suggested to me on social media reflect high journalistic standards and ethics.	5	4	3	2	1
Credibility Judgments on automatically recommended news						
28.	I rely more on news sources recommended by social media platforms when they are accompanied by user ratings or reviews.	5	4	3	2	1
29.	I pay attention to the number of shares, likes, or comments a news story has on social media when assessing its credibility.	5	4	3	2	1
30.	I am more likely to trust news stories recommended on social media if they are shared or endorsed by people I know and trust.	5	4	3	2	1
31.	I am more likely to accept news as credible if the news stories recommended to me on my social media feeds align with my preexisting beliefs.	5	4	3	2	1
32.	I consider factors like the publisher's reputation when evaluating auto-recommended news articles.	5	4	3	2	1
33.	I verify or fact-check news stories from my social media feeds with other sources	5	4	3	2	1
34.	I verify automatically recommended online sources news articles before liking commenting and share for other.	5	4	3	2	1

Section IV: Seeking Diverse News Perspectives

Direction: In the following set of questions, think of kind of news stories you like to read or watch on your news sources (social medias, e.g., Facebook, YouTube tik Tok and google) which automatically recommended to you.

How well do the following sentences describes your preferences?

Evaluate your preferences based on the degree of the sentences given below describe you.

No	Items	SA	A	N	D	SD
	User diverse news consumption on personalized online environment					
35.	When reading news online, I actively seek out sources with opposing viewpoints from my own.	5	4	3	2	1

36.	I believe it is important to read news stories from sources that challenge my existing beliefs and assumptions.	5	4	3	2	1
37.	I am open to changing my opinions or beliefs based on new information or exposure to alternative viewpoints through news consumption.	5	4	3	2	1
38.	I consciously allocate time to explore news sources that represent a range of cultural, social, and geographic backgrounds to gain a more global understanding of issues.	5	4	3	2	1
39.	I make an effort to follow news sources outside of my personalized social media feeds.	5	4	3	2	1
40.	When browsing my social media feeds, I encounter a variety of news sources and content creators with differing political stances, which helps me understand multiple sides of an issue.	5	4	3	2	1
41.	I cross-reference news stories from multiple sources with different perspectives before forming an opinion	5	4	3	2	1
42.	I intentionally follow or subscribe to news sources that represent diverse viewpoints, even if I disagree with some of their Viewpoints.	5	4	3	2	1

APPENDIX B

ADDIS ABABA UNIVERSITY MA PROGRAM IN MULTIMEDIA JOURNALISM

In Depth Interview Questions Protocol

Thesis title: Awareness of AAU students on personalized online news: In terms of credibility and diversity of news sources

Section I: Introduction and Warm-up

1. What is news for you? (Question for participant who are not from journalism department)
2. Can you tell me about your typical daily routine regarding your news reading, watching or listening habit?

Section I: Awareness of students on how social media personalize contents and news on user news feed.

3. Which social media platforms do you use most frequently, and for what purposes?
4. Tell me how social media you use select which news to show you on your feeds?
5. why they make those suggestions?

Probs:

If they mention algorithms or personalization, ask for them to expand on what they know about that

6. could you tell me why some news stories are shown more or less visibly on the internet or social media?
7. Do you know how social media such as Facebook, Tik Tok, YouTube and etc trace about user online activities?

Probs for if their answer is yes:

- A. what kinds of information do you think they gather about user?
- B. In your opinion, what do you think these platforms do with the data they collect from you and other users?
- C. Probs for if their answer is no:
- D. Could you elaborate on why you think social media platforms do not collect data about users?

Section II: Experiences with Personalized News Feeds:

8. How do you feel when you encounter news related to topics you've previously engaged with on your news feed?

9. can you share any personal experiences or observations you've had regarding how content is presented to you on social media platforms, and what factors you think influence the content you see?
10. Can you elaborate on any specific instance where you felt the news or contents presented to you on social media was particularly relevant or irrelevant to your interests?
11. How do you feel when you encounter news related to topics you've previously engaged with on your news feed?
12. When you and your friends or family member use the same social media do you think you will see the same contents or different?

Prob:

- A. What factors contribute to the variation in the news or contents seen by different individuals even though they use the same social media platform?
13. Have you ever actively sought out or engaged with certain types of news articles or sources on social media? If so, did you notice any changes in the content presented to you after that?

Section III: How students judge credibility of personalized online news

14. When you come across news articles or stories on your social media feeds, what factors do you consider to evaluate their credibility or trustworthiness?
15. When you encounter news that aligns with your interests or beliefs, how does that influence your perception of its credibility?
16. Have you ever encountered news stories or articles that seemed questionable or unreliable? A. If so, what made you doubt their credibility?

Section III: Exposure of students for diversity news sources and contents on automatically recommended contents environment:

17. How do you determine whether the news stories and sources on your social media feeds represent diverse viewpoints?
18. When browsing news stories on your social media feeds or online news sources, do you actively seek out perspectives or viewpoints that differ from your own? If so, why do you make an effort to do this?
19. Have you ever come across news stories or perspectives on social media that challenged or contradicted your existing beliefs or opinions? If so, how did you respond?

Appendix C

In-Depth Interview Question In Amharic Language

የቃለ መጠይቅ ጥያቄዎች ፕሮቶኮል

ክፍል I፡ መግቢያ፡

1. ለእርስዎ ዜና ማለት ምን ማለት ነው? (ጥያቄ ከጋዜጠኝነት ክፍል ላልሆኑ ተሳታፊዎች)
2. የእርስዎን የእለትተለት ዜና የማንበብ፣ የመመልከት ወይም የማዳመጥ ልምድን ሊነግሩኝ ይችላሉ?

ክፍል II፡ የማህበራዊ ሚዲያ ጸረ-ጥያቄዎች ዜና ና ደዘቶችን እንድት ለተጠቃሚዎ ግላዊ እንደሚያደርግ ላይ ተማሪዎች ያላቸውን ግንዛብ

3. ይቲቪሁን ማህበራዊ ሚዲያ በብዛት ይጠቀማሉ? ለምን ጉዳይስ ይጠቀማሉ?
4. የምትጠቀማቸው የማህበራዊ ሚዲያ ኩባንያዎች አንደት የቲቪውን ዝና ወይም ለሎች ርዕሰ ጉዳዮች በእርስዎ news feed ላይ አንዲመጣ ይመርጣሉ?
5. ለምንስ እነዚያን ምርጫዎች ያደርጋሉ?

ተያያዥ ጥያቄ፡

ሐ፡ አልጎረዚም ወይም ግላዊነትን ከጠቀሱ፣ ስለዚያ የሚያውቁትን እንዲያሰፉ ይጠይቋቸው

6. አንዳንድ የዜና ዘገባዎች በበይነመረቡ ወይም በማህበራዊ አውታረ መረቦች ላይ በብዛት ወይም ባነሰ መልኩ ለምን እንደሚታዩ ልትነግሩኝ ትችላላችሁ?
7. እንደ ፌስቡክ፣ ቲክ ቶክ፣ ዩቲዩብ እና የመሳሰሉት ማህበራዊ ሚዲያዎች የተጠቃሚ የበይነመረብ ላይ እንቅስቃሴዎችን እንዴት እንደሚከታተሉ ያውቃሉ?

መልስዎ አዎ ከሆነ ተያያዥ ጥያቄ ፡-

ሀ፡ መልሱ አዎ ከሆነ፣ እነዚህን ማህበራዊ ሚዲያዎች ምናይነት ውሂብ ስለ ተጠቃሚዎቻቸው ይሰበሰባሉ ብሎ ያምናሉ?

ለ፡ በእርስዎ አስተያየት፣ እነዚህ ማህበራዊ ሚዲያዎች ከእርስዎ እና ከሌሎች ተጠቃሚዎች በሚሰበሰቡት ውሂብ ምን የሚሰሩ ይመስላችኋል?

ምላሻቸው አላውቅም ከሆነ፡-

መ፤ እነዚህ ማህበራዊ ሚዲያ የተጠቃሚዎች ወሂብ አይሰበሰቡም ብሎ የሚአስቡበት ምክንያት ያብራራልኝ?

ክፍል III፡ ማህበራዊ ሚዲያ ይዘቶችን ግላዊ ማድረግ ላይ የተማረዎች ገጠመኞች

8. ማህበራዊ ሚዲያ ላይ ዜና ወደም ይዘቶች እንዴት እንደሚቀርቡልዎት ላይ ያስተዋሉት ወደም ገጠመኝ ካሎት እስቲ ያካፍሉኝ? እና እርስዎ በሚያዩት ይዘት በ የዜና ቋት(news feed) ላይ እንድመጣሎት ተጽእኖ የሚያሳድሩት ምን ምን ምክንያቶች ናቸው ብሎ ያስባሉ?
9. በማህበራዊ አውታሮች ላይ ለእርስዎ የቀረበው የዜና ይዘት በተለይ ለእርስዎ ፍላጎቶች ጠቃሚ ወይም ተዛማጅነት የሌለው ሆኖ አግኝቶ ያውቃሉ? አስቲ ስልሁንታው ይንገሩኝ?
10. ከዚህ ቀደም የዜና መጋቢ(newsfeed) ላይ ከተሳተፉባቸው ርዕሰ ጉዳዮች ጋር የተያያዙ ዜናዎች ሲያገኙ ምን ይሰማዎታል?
11. እርሶ እና ጓደኞችህ ወይም ቤተሰብህ አባላት ተመሳሳይ ማህበራዊ ድህረ ገጽ ሲጠቀሙ የሚቀርብላቸው ዜናወይም ልላ ይዘቶች ተመሳሳይ ነው ወይስ ይለያያል ብሎ ያስባሉ? ለምን ያተለያየ ይዘቶች አዩ ብሎ ያስባሉ? ለምንስ ይህ ሊዩነት ተፈጠረ ብሎ ያስባሉ?
12. በማህበራዊ ሚዲያ ላይ በራሶ ተነሳሺነት በአንድ ርዕሰጉዳይ ላይ የነቃ ተሳትፎ አድርጎ ያውቃሉ? ከሆነ ከዚያ በኋላ ማህበራዊ ሚዲያሁን ሲገቡ በራሱ በርሶ የዜና ገጽ ላይ በሚመጣላቸው ይዘት ላይ ምን ለውጦችን አስተውለዋል?

ክፍል II፡ የዜና ምንጮችን ታማኝነት መገምገም፡-

13. በማህበራዊ ሚዲያ ላይ የዜና ዘገባዎችን ሲያገኙ, ታማኝነታቸውን እንዴት ይገመግማሉ? ሌሎች ነው ወይም ሀሰት ንው ለማለት ምንምን ነገሮችን ግምት ውስጥ ያስገባሉ?
14. አጠያያቂ ዜናዎች ወይም መረጃ አጋጥሞህ ያውቃል? ሆኖ ታማኝነታቸውን እንድትጠራጠር ያደረገህ ምንድን ነው?
15. ከፍላጎቶችዎ ወይም እምነቶችዎ ጋር የሚጣጣም ዜና ሲያጋጥሙ፤ ይህ ለታማኝነቱ ባለዎት ግንዛቤ ላይ እንዴት ተጽእኖ ይኖረዋል?

ክፍል III፡ ስለ ኦንላይን ዜና እና ምንጩ ልዩነት ግንዛቤ፡

16. በእርስዎ የማህበራዊ ሚዲያ መጋቢዎች(newsfeed) ላይ የሚወጡት የዜና ዘገባዎች እና ምንጮች የተለያዩ አመለካከቶችን የሚወክሉ መሆናቸውን እንዴት ይወስናሉ?

17. በማህበራዊ ድህረ ገጽ ላይ ያሉህን እምነቶች ወይም አስተያየቶች የሚቃወሙ ወይም የሚቃረኑ የዜና ዘገባዎች ወይም አመለካከቶች አጋጥመውህ ያውቃሉ? ከሆነስ ምን ምላሽ ሰጡ?
18. ከተለመዱት ምርጫዎች ወይም እርሶ ካሎት አመለካከት ወይም እምነት የሚለያዩ ዜናዎችን ለመፈለግ ጥረት አድርጎ ያውቃሉ? ከሆነ፣ ይህን ለማድረግ ምን አነሳሳህ?

Appendix D

In-depth Interview participant Profile

Participants ID	Gender	Number of Participants	Department	Study year
P1	Female	1	Software Engineering	3
P2	Female	1	Computer Science	4
P3	Female	1	Computer Science	2
P4	Male	1	Law	2
P5	Male	1	Broadcast Journalism	4
P6	Female	1	Multimedia Journalism	2
P7	Male	1	Multimedia Journalism	4
P8	Male	1	Law	4
Total	-	8	-	-