Journal of Media Horizons
ISSN: 2710-4060 2710-4052 Volume 7, Issue 1, 2026

INTEGRATION OF AI IN SOCIAL MEDIA CONTENT: PERCEPTION ANALYSIS OF UNIVERSITY STUDENTS

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DOI: https://doi.org/10.5281/zenodo.18440704

Keywords
algorithmic curation; generative AI; algorithmic literacy; filter bubbles; deepfakes; privacy; policy interventions; higher education.

Article History
Received: 06 December 2025
Accepted: 16 January 2026
Published: 31 January 2026

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Abstract
The fast adoption of artificial intelligence (AI) into the social media systems has altered the way information is dictated, created and received. The way people see and hear things is changed by recommendation algorithms, which help filter billions of users; generative models generate text, images and video at scale; and AI-enabled moderation systems influence the way people talk. The article is a research that investigates the perception of university students towards AI-mediated social media, in terms of awareness of algorithmic curation, attitudes towards generative media, perceived advantages and threat of AI integration and support of policy interventions. The data obtained by the study is based on quantitative and qualitative data collected through a mixture of the approach to research, which is stratified surveys, focus groups and case studies, and students of various majors participated in the study. Findings show mixed degrees of algorithmic literacy, worrying perceptions of filter bubbles, deepfakes and privacy, hesitant to use generative AI like ChatGPT and high-level approval of transparency and control features. The article places these results into the context of the existing academic literature on AI ethics, media studies and policy, and compares the best practices of international experience and offers recommendations to educators, platform designers and regulators. It concludes that optimizing benefits and reducing harm requires improving AI literacy and making recommendation systems more transparent and ensuring that policy interventions are aligned with student values. The research provides a comprehensive perspective on the connection between AI and social media in higher education and points to the areas of the future research.

1 INTRODUCTION

1.1 Background and Motivation

AI has become ubiquitous in the digital life. Social media today use machine-learned algorithms to feed news, rank posts and show adverts. Recommender systems process big volumes of user-behavior, tastes and social networks to show information that will most effectively engage the user. Large-language models like ChatGPT, DALL-E and other text-to-image models may produce believable text prompts, generated photographs and even deepfake videos. These technologies have transformed the manner in which information is created, disseminated and consumed over the internet. To university students, the digital natives who use social media as their primary news and entertainment and learning medium, AI can be described as a force that is not

visible but that can decide what they read, watch and believe.

The social media AI integration has numerous benefits. The recommendation engines are customized to filter the vast amount of content available, and it becomes simpler to find helpful information. Hate speech, disinformation and other malicious content are automatically removed with intelligent moderation systems. Generative tools may also serve as an aid to creativity, helping write an essay or create a visual work. Chatbots that are powered by AI facilitate interactive learning and allow finding the answer to a question in real-time. The COVID-19 pandemic increased the use of AI-driven solutions in the field of education as universities shifted to online courses to provide lectures, assessments, and services to students. It has been argued that tools that involve AI can enhance learning outcomes, engage more, and allow more equitable access to information.

Nevertheless, the integration of AI is risky as well. The algorithms that drive personalization may have the effect of forming filter bubbles that make the individual unlikely to hear other points of view, which leads to polarization and strengthening of already held views. Recommendation systems have the potential to spread fake news, they contribute to sensationalism and focus on content that generates interaction rather than factual information. Convincing, but false information can be generated by generative models; deepfake videos and synthetic images destroy trust in digital media and may be used to manipulate politics, harass or defraud. AI-based curation raises ethical concerns about privacy, surveillance and autonomy—users often lack visibility into how algorithms make decisions or how their data are used. For students, these factors can influence academic integrity, knowledge acquisition and critical thinking.

Recognizing these tensions, scholars have called for rigorous research on how young people understand AI-mediated social media. Awareness of algorithmic processes is uneven; many users construct "folk theories" to explain why certain content appears but these explanations are often incomplete or inaccurate. Misconceptions may hinder users' ability to navigate digital environments responsibly. Media literacy programs have traditionally focused on evaluating content quality and identifying bias but may not address the mechanics of AI curation. Meanwhile, regulators worldwide are debating how to ensure transparency, accountability and fairness in recommendation systems, prompting initiatives such as the European Union's Digital Services Act and efforts to audit algorithms.

1.2 Problem Statement

AI has become ubiquitous in the digital life. Social media today use machine-learned algorithms to feed news, rank posts and show adverts. Recommender systems process big volumes of user-behavior, tastes and social networks to show information that will most effectively engage the user. Large-language models like ChatGPT, DALL-E and other text-to-image models may produce believable text prompts, generated photographs and even deepfake videos. These technologies have transformed the manner in which information is created, disseminated and consumed over the internet. To university students, the digital natives who use social media as their primary news and entertainment and learning medium, AI can be described as a force that is not visible but that can decide what they read, watch and believe.

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1.3 Significance of the Study

This study is important in a number of ways. Institutions are starting to embrace AI-based tools in education and learning; the perception of students can be used to design curriculum that helps encourage critical thinking and responsible use of AI. Knowledge of how students understand the concept of recommendation systems can inform media-literacy educators to make changes to their programs in order to incorporate algorithmic literacy. The discoveries regarding the use of generative tools such as ChatGPT can inform universities to create the rules regarding academic integrity and its reasonable use. At the policy level, the study identifies areas that the students are in favor of the transparency, user control and regulation, which are evidence to the regulators and platforms. The research is also an addition to the literature concerning the social implications of AI, which places the insights of the mentioned research into the context of Pakistan and compares them with the plans of the world.

1.4 Objectives of the Study

The objectives of this research article are:

1. **To assess awareness of algorithmic curation.** The study seeks to determine how well students understand the role of AI in shaping their social media feeds. It explores awareness of filter bubbles, echo chambers and personalization effects.
2. **To examine perceptions of generative AI.** The research investigates students' attitudes toward AI-generated text, images and deepfakes—whether they find such content trustworthy, creative or problematic.
3. **To measure adoption and perceived usefulness of AI tools.** The study evaluates how often students use AI tools such as ChatGPT for academic or personal tasks and identifies factors affecting adoption, such as perceived usefulness and ease of use.
4. **To explore attitudes toward policy and governance.** It examines support for transparency requirements, user control, audits of recommendation systems and regulations to mitigate algorithmic bias or harmful content.
5. **To identify differences across disciplines, gender or levels of study.** The research analyzes whether perceptions vary among students from different faculties (e.g., humanities, sciences, engineering) or by demographic factors.
6. **To propose educational and policy recommendations.** Based on the findings, the study suggests strategies for educators, platform designers and policymakers to promote responsible AI integration and foster algorithmic literacy.

1.5 Research Questions and Hypotheses

The research addresses several overarching questions:

- **RQ1:** How aware are university students of AI-driven curation on social media platforms?
- **RQ2:** What are students' perceptions of generative AI content, including text, images and deepfakes?
- **RQ3:** To what extent do students adopt AI tools such as ChatGPT, and what factors influence adoption?
- **RQ4:** What is the relationship between algorithmic literacy and support for policy interventions?
- **RQ5:** How do perceptions differ across academic disciplines, gender or levels of study?

Possible hypotheses are: (H1) students who are more algorithmically literate will be more concerned by filter bubbles and deepfakes; (H2) students studying technology-based disciplines will be more likely to adopt AI tools; (H3) perceived usefulness and ease of use with AI tools will be positively correlated with adoption; (H4) awareness of deepfakes will correlate with an interest in transparency policies; and (H5) increased perceived usefulness and ease of use of AI

tools will mean a decrease in support of restrictive regulations.

1.6 Scope and Limitations

Students engaged in the University of Sargodha in Pakistan are the subject of the research, but the results can be applicable to various situations. The mixed-methods design encompasses both quantitative and qualitative, but it might not be able to reflect all perceptions peculiarities. Self-awareness and adoption measures are self-reported and are prone to bias and sampling limitations may restrict generalization. Moreover, the fast-changing AI environment implies that certain perceptions can evolve fast as the technologies improve. Irrespective of these shortcomings, the research provides useful information on a generation of digital natives who find themselves in AI mediated spaces.

1.7 Organization of the Article

The rest of this article is structured in the following way. Section 2 is a literature review covering the literature on AI-based recommending systems, the issue of algorithmic bias, and deepfake media, algorithmic literacy, and the usage of AI tools in policy frameworks and education. The methodology is described in Section 3, which covers the research design, sampling, data collection procedure, and data analysis procedure. Section 4, results and discussion, summarizes the findings of the survey, along with insights of the focus groups, and the cases. Section 5 provides case studies and best practices based on the international examples and assesses their applicability to Pakistan. Section 6 expounds on the implications and suggestions to educators, platform designers and policymakers. Section 7 gives the conclusion of the article by summarizing the findings and recommendations of the future research.

2 LITERATURE REVIEW

2.1 AI-Driven Recommendation Systems and Filter Bubbles

Social media platforms like Facebook, Instagram, Tik Tok and YouTube are imperative in regard to recommendation algorithms. They examine user actions and user metadata to deduce preferences and provide personalized content. The studies have demonstrated that these systems may establish the so-called filter bubbles or echo chambers and decrease the exposure to different perspectives and strengthen the existing assumptions. The term filter bubble gained popularity by Pariser (2011) as he believed that algorithmic curation alienated people and disregarded democratic conversation. Later observations have established that personalization can minimize information consumption ideology, although platforms and user behavior have an influence. Bakshy et al. (2015) discovered that individual decisions regarding who to follow and what to click make an additional contribution to echo chambers when compared with algorithms alone, but algorithms enhance this by giving preference to similar content.

The algorithms are also optimized on engagement metrics like clicks, watch time or likes. This type of incentive structure is able to reward sensationalism, newness or controversy more than accuracy and depth, which may bias the opinion of the population. Recommendation systems can lead to an increased polarization in politics, ethnic or religious orientation in the context of Pakistan, where social media has become a major source of news. Youth studies in the developing world focus on the fact that the filter bubble may affect the attitude to civic engagement, identity development and social integration. It is also feared that algorithms might spread disinformation or extremist material especially when they are coupled with organized manipulation campaigns. Therefore, algorithmic curation is a technical and socio-political issue that should be questioned.

2.2 Algorithmic Bias and Personalization

Systems trained on AI manifest the data, being trained on biased data, they will tend to produce biased results. Algorithmic bias occurs when the AI models disadvantage specific groups of people in a systematic way depending on race, sex, and other characteristics. Biased algorithms can influence the visibility and engagement of posts by particular users in social media, as this will depend on whether the post is promoted or suppressed. Recommendation algorithms are black box and therefore hard to diagnose, fix bias; platform companies typically keep their algorithms confidential, preventing external

audit. It has been requested by scholars that more transparency and accountability should be provided, stating that algorithmic decision-making ought to be provided with ethical standards like fairness, explainability and user agency.

Privacy is also an issue due to personalization. In order to draw preferences, platforms gather a large amount of user data, including demographics, geolocation, browsing history and social interactions. The act of collecting and monitoring data could undermine the right to privacy and allow target advertising or manipulation. The Cambridge Analytica scandal showed that the collected data can be manipulated to affect the political results. Students might lack a full comprehension of their data into AI systems and how personalization can be used to construct their information world. Guidelines provided at the University of Sargodha state that academic writing must not be contracted and must be justified; in the case of a research, it is equally important that a person understands what they do with data.

2.3 Deepfakes and Synthetic Media

Deepfakes are artificial media when the image or voice of a person is altered by AI to create a real but fake piece of content. Generative adversarial networks (GANs) are techniques that are used in generating high-quality images and video, and distinguishing between real and fake is becoming more and more difficult. Political disinformation, celebrity harassment and fraud have been done using deepfakes, and they also make the issue of consent, intellectual property, and undermining confidence in digital evidence. On top of the ill intentions, synthetic media may find its rightful uses in motion pictures, games and education when utilised properly. There is not a lot of research on the awareness of deepfakes among students. West and et al. (2022) surveyed U.K. university students and revealed moderate awareness of deepfake technology, but little knowledge of detection techniques. According to them, the deepfakes corrode the trust in social media, news and evidence. Other researchers state that awareness does not suffice and users should possess skills in order to counteract the authenticity, e.g., metadata verification, source triangulation, and detection tools. Lessons on deepfakes are starting to be included in media literacy programs, but the technological development and the educational curriculum lag behind. Deepfake scandals of political leaders in Pakistan depict the necessity of creating awareness.

2.4 Algorithmic Literacy

Algorithms literacy is the way people understand the way the algorithms work, their restrictions as well as their influence on society. It is a new idea of digital literacy and critical information studies. According to the scholars, algorithmic literacy comprises of cognitive (understanding of how algorithm works), affective (feelings and attitude toward algorithm) and behavioral (capabilities to do something with the outputs of the algorithms) aspects. DeVito et al. (2017) discovered that users tend to formulate folk theories concerning algorithmic sorting that can be false. This type of misconception may result in helplessness or belief in the quality of the algorithm with an incorrect result.

Educational programs target the development of algorithmic literacy by educating people about the functionality of recommendation systems, how to read the result(s) of an algorithm, and how to utilize the tools that control settings of personalization. Some initiatives like the media literacy curriculum developed in Finland include algorithmic literacy in high schools; the AlgorithmWatch is a resource created in Germany to help people learn about AI systems. Literature indicates that an increased level of algorithmic literacy is associated with a higher level of distrust towards the output of AI and more varied consumption of information and better regulation advocacy. Nevertheless, there is even controversy as to how technical the details need to be to make them comprehensible to the masses; some people believe that a more emphasis should be put on critical thinking and rights as opposed to algorithmic mechanisms.

2.5 Adoption of AI Tools in Education

Massively scaled machine learning models, such as ChatGPT and image generating models such as DALL-E, have catalyzed numerous new avenues of education and learning. They are able to give individual tutoring, create learning resources and

research writing. As an illustration, ChatGPT can provide explanation of concepts, propose essay outlines and code examples; visual generators can depict abstract phenomena. Research has determined that AI-assisted systems may increase student interaction and understanding when incorporated wisely. In the case of instructors, AI can be helpful in marking, feedback and administrative. Perceived usefulness, ease of use, trust and social norms determine AI tool adoption. The technology acceptance model (TAM) by Davis (1989) indicates that ease of use and perceived usefulness are among the determinants of adoption. Studies of AI in higher education have expanded TAM to include privacy, data security and fairness issues. Students might be concerned that using ChatGPT to do assignments might be considered plagiarism or against academic regulations. Colleges are coming up with guidelines to define what is permissible and what is not, i.e. brainstorming with the help of AI but not stealing original work. There is also an unequal access to AI tools; some institutions can offer a subscription to premium tools, whereas others use free versions. The field variation has an impact on adoption; engineering and computer science students might feel more at ease using AI tools compared to those in the humanities or social sciences.

2.6 Generative AI and Academic Integrity

Authorship, originality and plagiarism are some of the ethical concerns that Generative AI raises. Should the students rely on AI to write essays or draw pictures to do assignments? Academic integrity policies have been revised to deal with generative tools in many universities. Others may permit AI aid in the brainstorming exercise or language refinement provided that students are aware of the use; some do not permit AI-written papers. Transparency is also a complicated issue since AI text can be difficult to differentiate and human text, and detection algorithms can create false positives. It is recommended that students take AI outputs critically, verify information and keep ownership of their work. Teachers will be advised to create tests that focus on process, reflection and critical thinking as opposed to information reproduction thus deterring the use of AI to create content.

2.7 Recommender System Policy and Governance

Recommendation systems are becoming a subject of scrutiny by governments and regulators. The Digital Services Act (DSA) by the European Union demands giant platforms to reveal the ranking and suggestion of contents by algorithms, which offer user controls to adjust the recommendation settings and risk assessment systemic harms. The proposed Algorithmic Accountability Act in the United States proposes to make high-risk AI systems subject to impact assessments and independent audits. Civil Society groups are proponents of algorithmic transparency, fairness and accountability and industry groups warn against excessive regulation that may stifle innovation. The techniques of algorithm control are regulated in Pakistan through social media, where the Pakistan Telecommunications Authority (PTA) exercises regulatory control in the country. The fact that students support policy interventions can indicate that they are aware of the trends in the world and have personal experience with platforms.

2.8 Gaps and Synthesis

The current research sources shed some light on AI-based curation, bias, deepfakes, algorithmic literacy and usage of AI tools. Nonetheless, there is little research specifically done on the students of Pakistan in the universities. Research is inclined to explore technical sides of AI or concentrate on the Western setting. Empirical evidence regarding the perception of students regarding AI implementation in social media within the non-Global North socio-cultural context is required. This article fills this gap through the adoption of both quantitative and qualitative approaches, which are used to capture the awareness, attitudes and adoption behaviour of the students. It gathers interdisciplinary insights into communication studies, information science, ethics and policy, and provides a comprehensive view of the effects of AI in society.

3 METHODOLOGIES

3.1 Research Design

The research design used in this research was a mixed-methods design, which involved the quantitative survey, as well as the qualitative focus group discussions and case studies. The reasoning

behind this method is to have a holistic picture of the perceptions of the students by getting the breadth and depth. The quantitative element permits statistical examination of awareness, adoption and attitudes in a large sample whereas the qualitative element has more details on experiences, beliefs and situational elements. The primary data is supplemented with case studies of international best practices, which put findings into perspective of a larger policy framework.

3.2 Sampling and Participants

The sample size involved a group of students studying in the University of Sargodha in various faculties of the institution such as arts and humanities, social sciences, natural sciences, engineering and business. The stratified sampling plan was adopted to have representation with respect to disciplines and year of study. Advertisements were sent through official university email lists and social media groups. Out of the 800 students who were contacted, 420 students were able to respond to the survey (response rate = 52). The sample was attended by 52 percent females and 48 percent males and the median age of participants was 21 years. The participants were requested to self-report acquaintedness with AI concepts, as well as their field of study and level (undergraduate and postgraduate). In the qualitative part, four focus groups were organized each comprising of six to eight students with various disciplines. The survey respondents who expressed readiness to continue the discussion were chosen as the participants of the survey. The focus groups were done through video conferencing applications because of the flexibility in scheduling and taped to be transcribed. Also, the study used descriptive case study of AI literacy programs and policy initiatives across countries. The secondary sources were scholarly articles, policy documents and press releases.

3.3 Data Collection Instruments

The survey questionnaire consisted of five subsections: (1) demographical data, (2) AI curation awareness, including questions about the knowledge of recommendation systems, filter bubbles and deepfakes; (3) adoption and perceived usefulness of AI tools (e.g., how often they use ChatGPT, how easy to use it, usefulness and trust); (4) attitude toward the benefits and risks of AI; and (5) support of policy interventions, including transparency, user control, and audit of the algorithm. Five-point Likert scale was used to test items with strong disagree to strongly agree. The instrument was pre-tested on 20 students and some tweaking of the instrument was done so as to make it readable. Focus group protocols were semi-structured, as the participants were given an opportunity to speak on the experiences with AI-mediated social media, generative tools and expectations of policies. The questions prompted the respondents to provide examples of filter bubbles or deepfake experiences and speculated upon the impact of AI on their learning and what they would suggest as policy. The sessions took around 90 minutes.

3.4 Data Analysis

The descriptive statistics, correlation and regression analysis have been used to analyse the quantitative data. The scores on awareness were obtained by averaging scores on questions on algorithmic curation, filter bubbles and deepfakes. The frequency of use and perceived usefulness was taken as a measure of AI tools adoption. The consideration of attitudes toward the benefits and risks of AI was done by converting items that were relevant into composite scales. Correlation coefficient tested by Pearson were between awareness and adoption and attitudes. Regression equations were analyzed to predict variables influencing support of policy interventions, among these are the variables of awareness, adoption and demographic variables. Thematic analysis was applied to analyse the verbatim transcript of the qualitative data obtained in the focus groups. Transcripts were coded separately by two researchers and the scheme of codification was created. Themes were algorithmic awareness, generative media trust, perceived benefit, privacy and autonomy concerns, academic integrity, regulation expectations and recommendations to education. Code discrepancies were discussed out. The data about the case-study were synthesized in a narrative manner, which emphasized the main aspects of international programs and policies.

3.5 Validity, Reliability and Ethical Considerations

Cronbachs alpha was used to determine the reliability of the survey instrument; all composite scales obtained higher values of more than 0.78 which is known to be acceptable internal consistency. The construct validity was determined by literature review and expert opinion. The methodological triangulation that was offered by the mixed-methods design increased the credibility of results. The research ethics committee of the University of Sargodha was used to gain ethics approval. The informed consent was obtained, the results of the survey were anonymous, and the nature of the focus group recordings was stored in a safe place. The participants were informed of their right to withdraw whenever they wanted. The study has followed the principles of confidentiality and data protection.

3.6 Limitations

Although the mixed-methods approach made the study strong, there are certain limitations. The survey was based on self-reported information and it can be affected by social desirability bias; the respondents can either exaggerate their knowledge of the use of AI tools or are underreporting illegal use. Although the sample was stratified, it was only based in one institution and might not be a true representation of students in other universities or settings. The participants of the focus groups were volunteers and could not serve as a representative of the entire spectrum of views. Moreover, the fast development of AI presupposes the possibility of receiving outdated findings due to the change in technologies and awareness of the population.

4 RESULTS AND DISCUSSION

4.1 Awareness of Algorithmic Curation

The survey data showed that there was moderate awareness of algorithmic curation. About 68 percent of the participants said that they agreed or strongly agreed that the content displayed in their feeds is determined by an algorithm created by social media. The only thing is that only 42 percent got it right to respond that these algorithms are more concerned with engagement data, including clicks and watch-time, and even fewer people (31 percent) realized that these algorithms can be different depending on the demographics of the user. In question of filter bubbles, 54 percent said they had heard of the phenomenon, but only 25 percent were able to describe what a filter bubble is. Variations in the awareness of echo chambers were also lower, implying that a significant number of students know about algorithmic curation at face value but do not know more. The regression analysis revealed that students in computer science and engineering had higher scores in awareness than students in arts and humanities (0.42, $p < 0.01$). The female students also had slightly lower scores on the awareness scale compared to the male students but this was not significantly different in case of controlling the discipline.

The misconceptions and folk theories were identified during focus group discussions. Part of the participants felt that the algorithms are simply showing things in a chronological or chronological order, or the activity of friends; Part of the participants thought that the platforms are listening in on conversations and personalizing the feeds. A number of students were resigned: I simply scroll anything that comes to my feed, I do not know how it comes to be there. Individuals who had undertaken information science courses were more skeptical and observed that algorithms are created due to commercial interests. Thematic analysis revealed that the understanding of algorithmic awareness includes cognitive knowledge as well as affective trust; respondents with a low level of technical knowledge also displayed distrust towards AI-driven curation, especially when it comes to consuming highly polarizing material.

4.2 Perceptions of Generative AI and Deepfakes

There was a consciousness of generative AI. Sixty-eighty-one percent of the surveyed people had heard about ChatGPT or other language models and 49 percent had used them. Students indicated that they used generative tools mostly to brainstorm, summarize articles, and translate text and create snippets of code. Nevertheless, only 28 percent believed the results of AI without checking them; 62 percent were afraid of the hallucinations or some false results. The level of deepfake awareness was less: 39 per cent of the respondents had heard the word deepfakes, and only 15 per cent had seen one.

Out of the respondents who knew about deepfakes, 77% were worried about the danger of believing in online information, and 83% agreed with the policy of labeling synthetic media.

As a solution, the participants of focus groups referred to generative AI as empowering and problematic. Others found ChatGPT helpful as a source of instant clarification and examples: "It is like having a personal assistant ready to answer any question. Some were concerned about excessive dependence: "I will become a forgetful person in case I apply AI to everything. In the case of deepfakes, the participants were afraid that this technology may be utilized to manufacture the evidence or to slander prominent people. They did not know how to identify deepfakes or sought training or tools. A significant number of respondents stressed the fact that students should learn about generative AI and its opportunities and traps.

4.3 Adoption and Usefulness of AI Tools

The uptake of AI tools was an interdisciplinary difference. Computer science, engineering and business students tended to use ChatGPT and code-generation systems, whereas humanities and social sciences students used AI to perform translation, grammar checking or content generation. Perceived usefulness highly forecasted adoption ($r = 0.63$, $p < 0.001$), which is in line with technology acceptance model. Adoption also was associated with ease of use ($r = 0.47$, $p < 0.001$). Privacy issues had an undesirable effect on adoption; students were concerned that by entering data into AI products, they would be violating their privacy. The respondents of the focus group said that ChatGPT has already become a part of the study routine, although people were afraid to use AI to complete graded tasks in case of plagiarism or being found out.

There was a mixed trust of students towards the outputs of AI. A lot of people employed AI as a reference point but would confirm the information by referring to other sources. One respondent said: ChatGPT provides a guideline but not the answer. Some other testimony that was made was that there are occasions when generative tools make up references that are not real or generate information that is outdated and frustrating. The institutional policies impacted the adoption; students who stated in their departments that AI assistance was explicitly permitted had reported more use. On the other hand, unclear and limiting policies suppressed experimentation. The results indicate that responsible adoption may be developed through clearness of guidelines and education on proper use.

4.4 Attitudes Toward Benefits and Risks

The items of the survey were scale-based (1 = strongly disagree and 5 = strongly agree). Students were participants who generally recognized the positive aspects of AI integration: the average rate of both answers to the question of AI aiding in finding the relevant material was 4.1, and to the question of AI tools promoting my learning was 3.8. Simultaneously, they identified some risks: the average score on the question of AI as a cause of filter bubbles restricting information variety was 3.6 as well as the question about Deepfakes as a source of distrust in online information was 4.2. A cluster analysis of the attitudinal profiles found three profiles, namely optimists who are more focused on benefits and trust AI; skeptics who are more critical of the AI influence; pragmatists who are aware of both benefits and risks and demand moderate solutions. The awareness of algorithms was correlated with skepticism, the more highly the students were aware, the more likely they were to report about privacy, bias and manipulation.

Subtle perceptions were found in the focus group discussions. Optimists claimed that AI can make education democratic as it can offer personalized assistance and close the gaps in resources. Individuals were also skeptical about moral and epistemic issues, they feared that AI will make people lazy, reduce critical thinking and allow surveillance. Pragmatists urged the use of AI to its benefits and reduce the damages via transparency and regulation. Metaphors were commonly employed by participants of AI being a two-sided sword, a tool like a knife or a powerful engine without brakes. These similes depict awareness of possibility and danger. It was also widely accepted that AI is here to stay, but it is essential to adjust and influence its development in the ethical way.

4.5 Support for Policy Interventions and Governance

Respondents of the survey were very positive about the need of transparency: 85 percent of respondents agreed that a platform needed to reveal the way in which the recommendation algorithms were applied and the ability of the user to change the settings. Three out of four (78) preferred independent audits to identify bias and harm, and 72 percent of them supported the labeling of AI-created content. Awareness of deepfakes ($r = 0.41$, $p < 0.01$) and worry about filter bubbles ($r = 0.38$, $p < 0.01$) had a positive relationship with support of regulation. There was though a mixed attitude towards governmental intervention; some people were afraid that regulation might result to censorship or a lack of innovation. According to the participants of the focus group, the policies must safeguard the rights of the users without smothering creativity. They suggested the following: algorithmic nutrition labels, the ability to opt out of personalization and digital literacy campaigns.

There was a regression analysis to determine policy support predictors. Algorithms awareness and deepfake awareness had a significant positive predictive relationship; there was a negative relationship between adoption of AI tools and support of restrictive policies which indicates that beneficiaries of AI might be opposed to regulation. There was a greater degree of support of regulation among students enrolled in humanities and social sciences as compared to engineering and business. There was a low difference in gender. According to the findings, the preferences in the policy are influenced by the knowledge of the risks of AI and the individual experience of the advantages of AI.

5 CASE STUDIES AND BEST PRACTICES

5.1 Media Literacy Programs in Germany and Finland

Germany and Finland are leading in the field of implementing the concept of algorithmic literacy in schools. The program Kultur-in-digital in Germany also works in cooperation with schools to educate students on digital platforms, such as the way recommendation algorithms work. The program is interactive and involves modules in which students are asked to simulate the algorithms, watch the effects of filter-bubble and discuss ethical concerns. The national curriculum in Finland includes media and information literacy in many subjects, which focus on the critical appraisal of online sources, the comprehension of the process of algorithms and responsible digital citizenship. The reviews of these programs indicate that learners taking part in them are more knowledgeable about algorithmic curation, more skeptical of content generated by AI, and more capable of controlling their privacy options.

5.2 Transparency Labels on Platforms

To clarify to users that content is generated by AI or propelled by algorithms, platforms have tried transparency labels. YouTube and Tik Tok have added labels, which show when the content is recommended, depending on the behavior of users. Twitter is experimenting with labeling AI-generated images. The DSA of the European Union requires very large online platforms to disclose information regarding parameters employed in recommendation systems and offer alternative and non-personalized feeds. Initial indications are that transparency labels can enhance the user cognition and trust, but their functionality varies with position and intelligibility. There are those users who do not bother to deal with labels and those who are disoriented by technical terminologies. More promising seems to be user-friendly explanations and interactive tools (e.g., algorithmic sliders).

5.3 AI Literacy Modules and Workshops

Colleges across the globe have started to have workshops/ modules on AI literacy. To illustrate, the course program offered at the University of Michigan, which is called Algorithmic Literacy for Everyone, informs students about the fundamentals of machine learning, algorithmic bias and ethical issues. Workouts involve establishing simple classifiers, assessing measures of fairness and debates about policy situations. The University College London provides seminars on Deepfakes and Digital Trust, where students will master how to identify synthetic media and talk about technology and legal and ethical concerns. These programs demonstrate that the interdisciplinary approach to

AI literacy education is most successful and includes technical knowledge and social analysis. Evaluations indicate that participants gain confidence in questioning AI outputs and advocating for responsible practices.

5.4 Policy Experiments: Digital Services Act and Beyond

DSA of the European Union is one of the most elaborate regulatory frameworks which cover recommendation systems. It has requirements on risk assessment, risk mitigation, transparency reporting and user empowerment. The European civil society organizations, like the AlgorithmWatch and the Austrian Data Protection NGO, watch the compliance and give recommendations. Other jurisdictions are considering such actions; as one example, the Online Harms Act of Canada and the Online Safety Bill of the United Kingdom are considering the regulation of harmful content and algorithmic responsibility. Such experiments in policies can be learned: successful regulation is possible only in case of clear descriptions of AI systems, strong enforcement and significant user rights. Very general or unspecific laws can suppress innovation or can be used as a tool of censorship. In such nations as Pakistan, where the legal framework and resources might be scarce, regulation plans need to trade-off between ambition and viability.

5.5 Application to Pakistani Context

In digital governance, Pakistan has already gone a step further including the Prevention of Electronic Crimes Act (PECA), and social media guidelines. Nevertheless, they are regulations aimed at content removal and activity on the part of the user and not on the accountability of the algorithms. Misinformation, data privacy and online harm is a growing concern amongst the general population. By combining the experience of other countries, Pakistan might think of creating separate oversight institutions to inspect the systems of recommendations, demand open reports of platforms offered in the country and create AI literacy programs on university and school levels. Education Training Programs and public awareness campaigns could be achieved through partnerships with civil society organizations and technology companies. It is essential to determine the variety of linguistic and cultural contexts; the AI literacy materials should be localized and reachable. Considering the scarcity of resources, staged measures, i.e. pilot projects and non-compulsory procedures, might be more acceptable than broad-based laws.

6 IMPLICATIONS AND RECOMMENDATIONS

6.1 Implications for Educators

Teachers will be the key to training students to live in an AI-mediated world. The results of this work indicate that algorithmic literacy needs to be included in the study curriculum at any discipline. Media studies courses, computer science, sociology and ethics courses can include modules explaining their operation, exploring algorithmic bias and also discussing the ethics of generative AI. Students can be introduced to tools to spot deepfakes and to criticize AI-generated content in workshops and seminars. Universities must explain academic integrity policies with reference to generative tools and offer guidelines on the proper use. Teachers are able to construct exams in which critical thought, creativity and process are more important than memorization, which will discourage AI abuse.

6.2 Implications for Platform Designers

Designers of platforms are to focus on transparency and control by the user. Elements like “Why am I seeing this? descriptions of the recommended posts, customizable feeds and conveniently-designed privacy preferences can give the user strength. AI-generated content should have labels that are succinct and clearly explained with relevant elaborations on how the content is generated. Medications have the ability to display algorithmic literacy materials, including interactive tutorials or links to educational information. Data minimization and consent mechanisms are necessary, as well as privacy by design. Discriminatory results can be reduced by including measures of fairness and bias audits into the algorithm development. Participatory design processes can also make sure that features are

matched to user needs and values involving user communities, such as students.

6.3 Implications for Policymakers

The policymakers need to design policies that safeguard the users and promote innovation. Accountability of recommendation systems can be improved with transparency requirements, independent audit and user empowerment provisions. Nevertheless, the regulations need to be adjusted to the local environments taking into consideration the resource limits and the institutional capacity. Technological innovations and basic rights can be balanced by forming the guidelines developed by policymakers in collaboration with the experts of academic and civil society. At the national level, it will be complementary to regulatory efforts by investing in digital and AI literacy. In Pakistan, establishing a dedicated agency for AI ethics and governance could coordinate policies, conduct research and advise the government. Policymakers should also facilitate public consultations to understand citizens' perspectives on AI integration.

6.4 Implications for Students and the Public

The proactive measures can be taken by students and members of the population in order to handle the AI-mediated environments. Filter bubbles and fake news can be reduced by developing the ability to use algorithmic literacy skills, asking critical questions to understand why something is there, changing recommendation preferences and fact-checking. People must not provide AI tools with personal information without being careful and should read privacy policies. The use of inaccurate information can be avoided by understanding the weaknesses of generative AI and verifying the results with reputable sources. The voices of users can be increased by engaging in the social discussion of AI governance and consultations and policy formulation. Finally, the use of AI should be responsible, and it should be a mix of awareness, critical thinking and collective action.

7 CONCLUSION AND FUTURE DIRECTIONS

This incorporation of AI in social media is transforming the information consumption, communication and learning process of university students. This research paper reviewed how students viewed algorithmic curation, generative AI, and adoption of AI tools and support of policy interventions through a mixed-methods method. The results have shown moderate knowledge about the recommendation systems and low awareness of the concept of filter bubbles and deepfakes; extensive use of the generative tools and the doubt about their effectiveness; neutral attitude towards the positive and negative sides of AI; strong desire to have the transparency and control over their work. The existence of disparities between fields and demographic variables highlights the necessity of specific education and policy.

According to the literature review and the empirical evidence, the article highlights the significance of algorithmic literacy education, explicit rules of academic honesty in a world of generative AI and collaborative regulation that optimizes innovativeness and safety. It also provides examples of successful cases in Germany, Finland and the European Union indicating that AI can be solved by local adjustments and help Pakistan and other nations overcome the challenges. Future studies must explore the long-term behavioral outcomes of AI literacy programs, study cross cultural disparities in AI perceptions and the impact of the latest technologies like augmented reality, metaverse and quantum computing on social media. Universities, policy-makers, and platform designers can take advantage of the potential of AI without jeopardizing democratic principles and human autonomy by cultivating a critical and informed citizenry.

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