

# Decoding the Algorithm: An Evaluation of Awareness of Social Media Algorithm among Graduate and Postgraduate students.

**Akshitha Beljes V<sup>1</sup>, Dr. Ravi Krishnan C J<sup>2</sup>, Dr. R. Rama Prabha<sup>3</sup>, Chithra M<sup>4</sup>,  
S Fidha Rahima<sup>5</sup>, Dhanasekar S<sup>6</sup>**

Research Scholar, Department of Communication, PSG College of Arts & Science, Coimbatore, India<sup>1</sup>

Assistant Professor, Department of Visual Communication, PSG College of Arts & Science, Coimbatore, India<sup>2</sup>

Assistant Professor, Department of Communication, PSG College of Arts & Science, Coimbatore, India<sup>3</sup>

Research Scholar, Department of Communication, PSG College of Arts & Science, Coimbatore, India<sup>4</sup>

Research Scholar, Department of Communication, PSG College of Arts & Science, Coimbatore, India<sup>5</sup>

Research Scholar, Department of Communication, PSG College of Arts & Science, Coimbatore, India<sup>6</sup>

**Abstract:** Social media algorithms play a huge role in content consumption as they personalize recommendation based on user's online behavior and preference. As students are the most active users in social media platforms, having a solid knowledge of these algorithmic systems is important to promote online literacy and informed media use. The aim of this research is to describe the level of social media algorithms among students of bachelor's and master's degree. The study employed a descriptive quantitative research design with a structured questionnaire distributed to undergraduate and postgraduate students of higher education institutions. To build algorithm literacy and inspire more informed and critical engagement with social media platforms. The study aims to examine social media algorithm awareness and its influence on user's perception, behaviors, and decision-making processes of UG and PG students.

**Keywords:** Algorithm, Awareness, Social Media, Behavior, Students

## 1. INTRODUCTION

The prevalent use of social media has transformed the way students communicate, find information, and engage with digital content. Platforms like Instagram, Youtube, and Facebook apply complex recommendation algorithms to customize the experience for their users by studying their interactions, preferences and online behavior [1]. Algorithmic systems influence the information environments of users by determining the visibility of posts, videos, advertisements and news on these platforms. As social media becomes more embedded in student's academic and personal lives, knowledge of these algorithms has become an important element of online literacy and informed media use [2]. Research also suggests that algorithmic awareness helps users to understand the mechanics behind personalized content and to make more informed choices, when interacting with digital platforms.

Social media is one of the most popular activities among bachelor and postgraduate students. They use it for learning, communication, entertainment and professional works. But frequent social media use doesn't equate to an understanding of the algorithms that influence online experience [3]. Recent studies show that young users learn practical skills from their social media platforms use, but they do not understand how algorithms collect data, personalize content, and shape exposure to information [4].

The existing evidence suggests that the degree of algorithm awareness among social media users is fairly moderate overall, highlights the significance of improving algorithm literacy in higher education curricula [5]. Comparing undergraduate and postgraduate students may provide useful insights into whether differences in educational experience are associated with greater understanding of algorithmic content recommendation and personalization [6]. This descriptive study attempts to explore the knowledge of social media algorithms among undergraduate and postgraduate students.

## II. ALGORITHMIC AWARENESS

Algorithm awareness is the ability to understand how algorithm work, what they decide and how they influence what people see on digital platforms. Algorithmic awareness is the understanding that social media platforms increasingly depend on artificial intelligence and machine learning, has become an important part of digital literacy[7]. Social media algorithms track user's online behavior such as likes, comments, searches to tailor content that would be most likely to catch their attention[8]. Consequently users are exposed to individualized information environments, which are different from other users. When people become aware of the algorithmic processes, they realize that the content appearing in their social media feeds is not random, but is intentionally selected by automated computational processes [9]. It also helps users realize that algorithmic recommendations are not strictly based on user's immediate preferences, but on personal data, behavioral patterns and platform objectives. **Greater algorithmic awareness allows users to assess online information critically, challenge personalized recommendations, and make informed decisions regarding their digital interactions**[10]. Such awareness is especially need for graduate students who heavily rely on social media for learning and communication[11]. More algorithmic aware students are can better prepared to protect their online privacy, assess the credibility of digital information and understanding the broader societal impact of algorithmic systems[12]. Thus, raising algorithmic awareness among college students is increasingly being framed as a key objective of digital literacy interventions in higher education.

## III. REVIEW OF LITERATURE

The study "*When knowing more means doing less: Algorithmic Knowledge and digital (dis)engagement among young adults*" shows how undergraduate students are aware of social media algorithms and how much they notice appearance related content that is chosen by algorithm. They used a quantitative correlational study with 215 students. Their results show that when students know more about how social media algorithm work, they are more likely to recognize content about appearance that is picked by those algorithms [13].

The research "*Understanding the Impact of Social Media Algorithms on Teenager's Brain and Emotions: A Cross-Field Approach*" deliver how social media algorithms effects the thinking and feelings of teenagers. They used a mixed methods study that combined different research approaches and included students from government schools in Delhi. The study showed that when teens are exposed to more algorithm driven content, they are more likely to feel sad, stressed, and have trouble sleeping. This suggests that content recommended by algorithms can hurt teenagers mental health. Qualitative findings showed that personalized suggestions, continuous scrolling keeping people on social media for longer[3].

The study "*The Impact of Social Media Algorithms on Information Consumption*" reveals how young adults 18-25 in the United States understand algorithms, know about them, and interact with digital content. They used a survey to collect data from 348 participants. The research showed that people who know more about algorithms are better at spotting false information and understanding the dangers of filter bubbles on social media. Even though people are more aware now, they weren't very likely to correct false information or really get involved with different opinions. This shows that just knowing things doesn't always lead to better behavior online[6].

## IV. PURPOSE OF THE STUDY

This study aims to explore the extent to which undergraduate and postgraduate students are aware of the functioning and impact of social media algorithms. Moreover the study is designed to assess students understanding of how algorithms rank and tailor content, automate content suggestions, use personal data and impact user's online experiences[14]. Students are one of the largest groups of social media users, and thus it is important to understand their awareness of algorithmic system that increasingly affect their academic, social and personal lives.

## V. METHODOLOGY

The study adopts a quantitative research design to examine the algorithmic awareness and algorithmic influence on social media content[15]. The response were collected equal distribution of undergraduate and postgraduate students. Data was collected using a structured questionnaire comprising demographic questions and algorithm awareness measured on a five point Likert scale. The questionnaire was distributed online through Google Forms. The descriptive approach was chosen because it allows for the systematic collection and analysis of numerical data to describe participant's awareness and understanding without manipulating any variables.

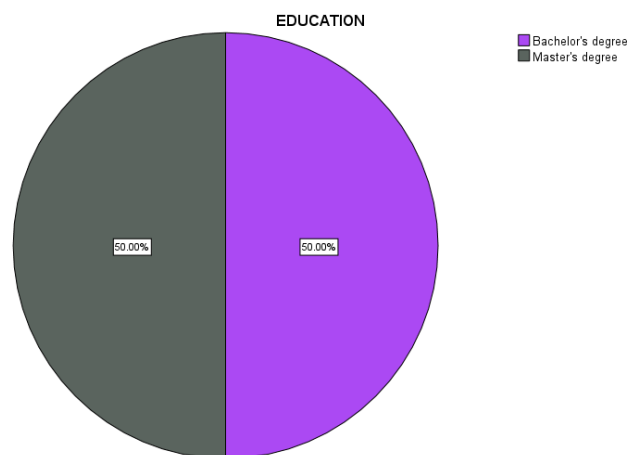
## VI.OBJECTIVES

1. To investigate the knowledge of social media algorithms based on time spent on social media.
2. To analysis the level of understanding of social media algorithms of students.

## VII.RESEARCH QUESTION

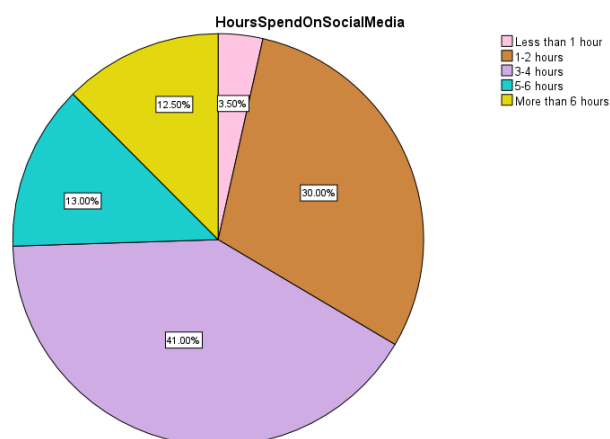
1. What is the understanding of algorithm based on students the time spent on social media?
2. To what extent students understand the algorithm of social media?

### Data Analysis

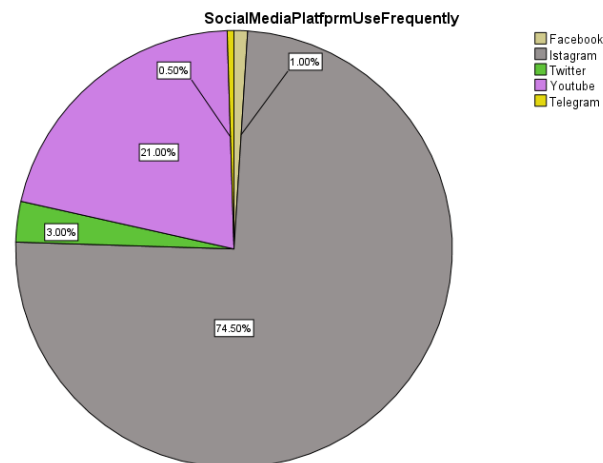


An equal ration of data was collected from both UG and PG students to know about the understanding of algorithm on social media user platform. Research also shows that awareness of algorithms is obtained mainly through formal education, not through social media use alone, which shows the importance of integrating algorithm literacy into higher education curricula. Increased algorithm literacy allows students to critically engage with personalized content, understand algorithmic influence, and make informed digital choice [1].

### RQ: 1.What is the understanding of algorithm based on students the time spent on social media?

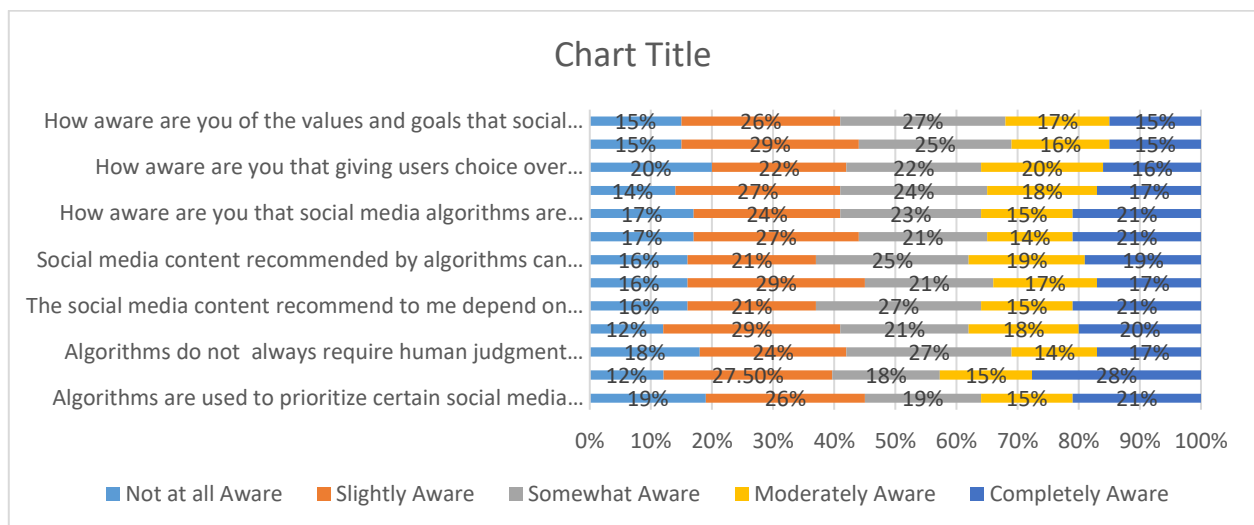


Individuals mostly spend time 3 to 4 hours a day on social media. In the total number of 200 respondents approximately 41.00% were majorly spend three to four hours a day. The U.S Surgeon General's Advisory on Social Media and Youth Mental Health reports that adolescents who spend more than three hours a day on social media are more likely to report symptoms of depression and anxiety than adolescents who spend less time online. Students spend an average of 3.5 hours a day on social media platforms, the advisory notes, citing the increasing impact of algorithm driven content on young users [24]



People engage in number of social media platforms, but in this study more respondents choose Instagram as their frequently used with percentage of 74.50%. Instagram is one of the most popular social media platforms among adolescents and young adults. The Instagram algorithm is continuously tailoring the user's feeds, Reels, and Explore content to maximize user engagement. Infinite scrolling, autoplay, notifications, personalized recommendations all of these and moreover it keep people on platforms longer and lead to spending more time on the internet [23]

## RQ: 2.To what extent students understand the algorithm of social media?



The descriptive results indicate that respondents have a moderate level of awareness regarding social media algorithms. The response to the questionnaire items were mostly clustered in the categories slightly aware and somewhat aware, with few respondents reported being completely aware. Participants showed relatively greater awareness of algorithmic personalization and content recommendations, particularly that algorithms customize content based on user's interests and behavior. However, awareness was comparatively low of algorithmic transparency, design choice, underlying values and wider societal implications. Overall, the result indicate that respondents have a basic understanding of social media algorithms, but there is still a lack of comprehensive understanding of the mechanisms and effects of these algorithms[16].

## VIII.DISCUSSION AND FINDINGS

The study results revealed that respondents had a moderate level of algorithm awareness overall. The results underline the importance of increasing algorithm literacy to enable users to make more informed and critical use of social media platforms. More respondents were aware that algorithms personalize content based on user's interests and online behavior. Perhaps this is because users are accustomed to personalized recommendation on platforms like Instagram, Youtube, where algorithmic recommendation are part of users experience[17], Users are becoming more aware that social media platforms curate content based on their user behavior, [18]. But there is still a lot of uncertainty as to what criteria algorithms exactly use to priorities information[19].

However, awareness was comparatively lower regarding algorithmic transparency, human bias, privacy implications and the values embedded in algorithmic design[20]. This suggests that respondents are less familiar with ethical and societal dimensions of algorithmic systems. These findings are consistent with Gran, who argued that although users acknowledge the existence of algorithms, they often lack sufficient algorithm literacy to critically evaluate issues such as transparency, fairness and accountability[21]. Similarly, emphasized that the invisible nature of algorithmic system makes it difficult for users to understand how platform decisions are made, contributing to limited awareness of algorithmic influence[11]. Overall, the results suggest that respondents possess a functional understanding of algorithmic personalization but limited knowledge of the broader technical, ethical and societal implications of social media algorithms. This highlights the importance of strengthening algorithm literacy initiatives so that users can better understand how algorithms influence information exposure, privacy and online decision making[22]. Improving public awareness may also encourage more informed and critical engagement with algorithm-driven platforms.

## IX.CONCLUSION

Students have a reasonable grasp of social media algorithms. Most students realize that sites like Instagram tailor content to their interests and online activity. The more time students spend on social media, the more aware they become of algorithmic features. Results demonstrate that frequent use of the platform does not equal a full understanding of social media algorithms. Students need awareness of algorithms to reduce the power of algorithmic manipulation.

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