



# Effects of social networking sites on university students' academic performance: A systematic review

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## ABSTRACT

This paper analyzed the effects of social networking sites (SNS) on university students' academic performance. In this study, the peer-reviewed articles were taken from the SCOPUS database. The 22 articles meeting the inclusion criteria were involved in the analysis. Two researchers analyzed the articles using the content analysis method according to the researchers' established analysis criteria. The results showed that research has generally reported positive and significant results on the influence of SNS on academic achievement. However, some studies have reported the negative effects of SNS on academic achievement. The results regarding the publication year of the reviewed studies showed an increase between 2019 and 2022. The results also showed that the data collection instruments included quantitative methods to collect data in all reviewed studies, and most participants were between 100 and 300. In addition, the main data source to measure academic achievement was the Grade Points Average, and most of the research was conducted in Saudi Arabia. These findings from this research add new insights to the literature and have important conclusions for researchers regarding the uses of SNS on academic achievement.

**Keywords:** social networking sites, university students, academic achievement

## INTRODUCTION

Individuals are closely connected to social media in today's society because it is a way to communicate, share, and spend time with different people in an online social environment without depending on the place and time conditions (AlFaris et al., 2018; Hussain et al., 2017; Zheltukhina et al., 2017). With the rapid growth of communication technologies, social networking sites (SNS) such as Facebook, Instagram, LinkedIn, and Twitter have become very popular for connecting with others worldwide (Alfaris et al., 2018; Hossain, 2017; Mark et al., 2023; Owan et al., 2020). With the increasing popularity of SNS among university students, the education systems need to adapt their teaching and learning approaches according to SNS to provide students with helpful information and build learning communities in online learning environments at higher education levels (Gilemkanova, 2019; Nannim et al., 2023). SNS helps students interact with peers or others, share information, and meet with experts in a particular field to expand their knowledge connections and networks in online environments (Gafarov et al., 2021; Hussain et al., 2017). Through these platforms, students can follow the information of experts in a research area and benefit from their information through opinion exchange with the experts (Alamri, 2019).

In today's society, almost all universities have social media accounts to introduce their programs, make announcements for their students, and interact with their students and stakeholders. Especially during the COVID-19 pandemic, universities were forced to offer online courses (Adedoyin & Soykan, 2023; Pokhrel & Chhetri, 2021) and make social interactions and share with their students so that students could communicate and connect with their students through social media platforms (Obi-Ani et al., 2020). Specifically, instructors and students have begun to use mostly these platforms since the beginning of the COVID-19 pandemic to share course content and create online course discussion groups to encourage them to discuss, learn, and teach courses (Vlasova, 2021). For example, a recent study of 1,720 medical students in Saudi Arabia by Alfaris et al. (2018) found that 98% of participants indicated using SNS. The most popular SNS among students were WhatsApp, YouTube, and Twitter for general usage. They found that students mostly used YouTube (83.5%), WhatsApp (35.5%), and Twitter (35.3%) for educational purposes and learning. They also found that, on average, most students visited SNS more than four times daily and spent most of their time on SNS daily. Main reasons for using SNS were entertainment (95.8%), getting news (88.3%), socializing (85.5%), and academic studies (40%).

With rapid increase in use of SNS among university students and rapid growth of communication technologies, majority of university students, social media, and their impact on academic achievement have attracted attention of researchers in research literature (e.g., Barton et al., 2021; Nannim et al., 2023). Research (e.g., Barton et al., 2021; Li et al., 2019; Malak et al., 2021) has shown that university students feel dependent on technology because they have grown up with its rapid growth and witnessed its increasing speed. In this case, students turn their attention to SNS such as Facebook and Twitter to connect for various purposes and university work simultaneously (Hossain, 2017). In parallel with these developments, several studies have been needed to examine whether social networks affect student achievement (Abdulqader & Almunsour, 2020; Bitherman & Frempong-Kore, 2021; Khan et al., 2016). To this end, many researchers have examined impact of SNS on academic achievement and relationship between SNS use and achievement and learning outcomes (Astatke et al., 2021; Huang, 2018; Vakhitov et al., 2021). But number of studies that have systematically examined effects of SNS on academic achievement is minimal. For example, using a systematic review approach, Astatke et al. (2021) only analyzed impact of SNS on academic achievement of secondary school students. They reviewed 27 journal articles. They showed mixed results regarding influence of SNS use on academic achievement. They showed that few studies reported positive impact of SNS use on students' academic achievement. They also show that excessive use of SNS, inappropriate use of SNS, and use of SNS for leisure activities negatively affected secondary school students' academic achievement. To our knowledge, no other study reporting and reviewing effects of the SNS on academic achievement among university students exists in literature. Due to this reason, this study aimed firstly to identify trends and gaps in literature by comprehensively examining influences of SNS on academic achievement. The second aim is to summarize the research results on SNS and academic achievement. The results of this review will allow researchers to identify findings of other studies in literature and draw conclusions for researchers and practitioners about the impact of SNS on academic achievement. The research questions that guided this study are listed below:

**RQ1.** What are the general characteristics of research on the impact of SNS use on academic achievement?

**RQ2.** What are the research findings on the influences of SNS use on academic achievement?

A systematic review of studies on the impact of SNS on academic performance provides a better understanding of the relationship between SNS and achievement. The results can inform instructors and researchers about the use of social media for educational activities and courses and inform the academic community about their impacts on student performance by providing insightful findings to provide more information to the higher education stakeholder.

## METHOD

This systematic review consisted of analyzing peer-reviewed articles in the SCOPUS database. A systematic review aims to summarize the latest knowledge on a particular topic while answering specific research questions (Kurniati et al., 2022).

### Inclusion and Exclusion Criteria

Researchers used specific inclusion criteria to systematically review peer-reviewed articles on the SNS and academic achievement using keywords to reduce researcher bias. The following criteria were used to search and include articles in this study. First, the researchers searched for articles related to SNS and academic achievement published in journals indexed in the SCOPUS database. The SCOPUS database was selected for this study because it is one of the most well-known databases in the world and is widely accepted in many countries for academic promotions. Elsevier, a prominent publisher of academic publishing, publishes the SCOPUS database. For this reason, the researchers searched for peer-reviewed and empirical articles in English in the SCOPUS database.

The search in this study did not consider articles from literature reviews, book chapters, and conference papers. These publications were excluded from the search in the database. Researchers limited the search results to social sciences to reach more related articles regarding academic achievement during the search. Only articles published on SNS, and academic performance were considered in the search and included in the analysis.

### Selection of Articles

A combination of keywords consisting of (social networking sites) OR (social networking) OR (sns) OR (social media) AND ( achievement ) OR ( performance ) OR (outcomes) AND (undergraduate) OR (university) was used to search articles in the SCOPUS database to search articles. Searching the database, the researchers found 58 articles published in indexed journals in the database. While searching the database, researchers did not use any date limitations. All 58 articles were downloaded from the database and the publishers' websites. All articles' titles, abstracts, purpose, and brief outcomes were read. After this reading, two researchers discussed the suitability of the searched articles based on the inclusion and exclusion criteria so that they decided whether an article should be included in the analysis of this review study. All articles searched in this study were quantitative, qualitative, and mixed methods research articles. The screening process of the articles resulted in 22 articles that met the criteria (see [Appendix A](#) for more details). These articles were considered for analysis in a systematic review.

**Figure 1** shows the systematic review process in this present study in detail.

### Data Analysis

The researchers adapted and used the content analysis method to review the articles. In applying this method in this study, the researchers classified the articles by year of publication, participant groups, number of participants, type of achievement measures, type of research methods, the country, where the data were collected, purpose, and key findings. The reliability was measured by percent agreement and Cohen's kappa coefficient between the two researchers. The percent agreement between the two researchers was reported to be 94.4%. When researchers disagreed, they discussed conflict to reach a consensus for data analysis.

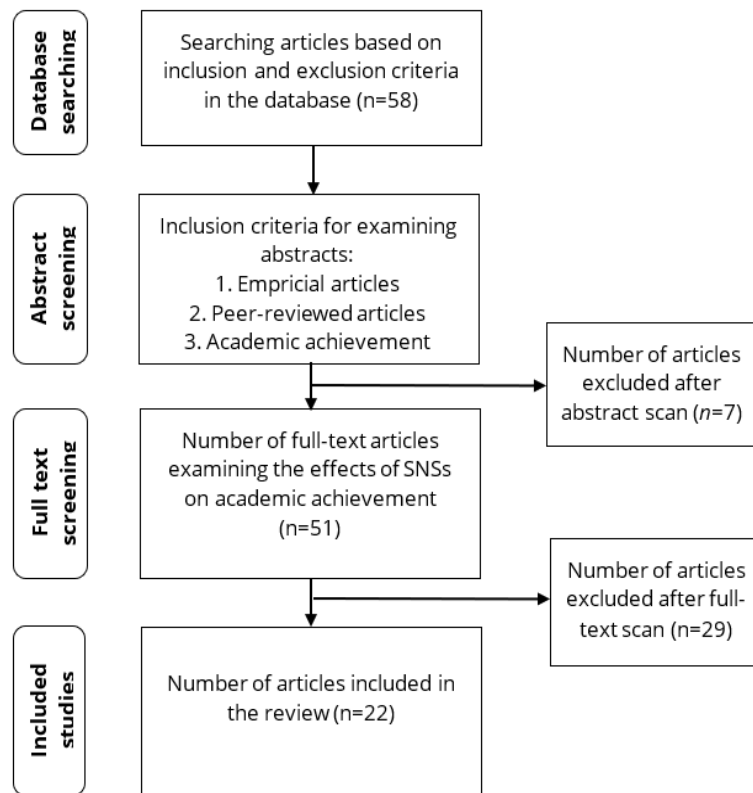


Figure 1. PRISMA chart for reviewed articles (Source: Authors)

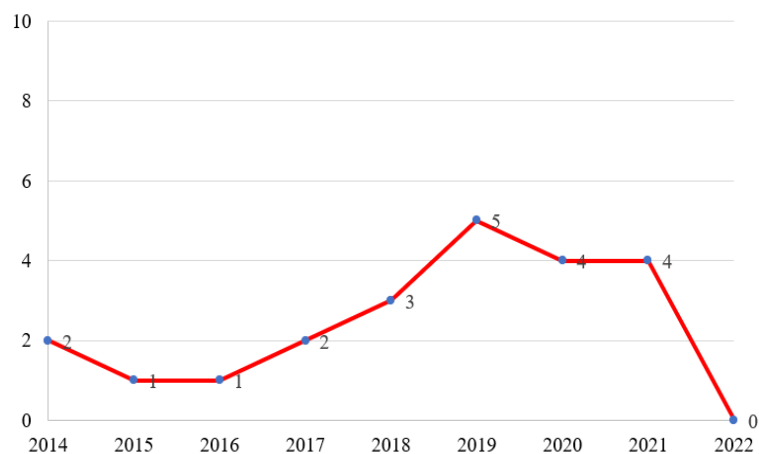


Figure 2. Distribution of research according to publication year (Source: Authors)

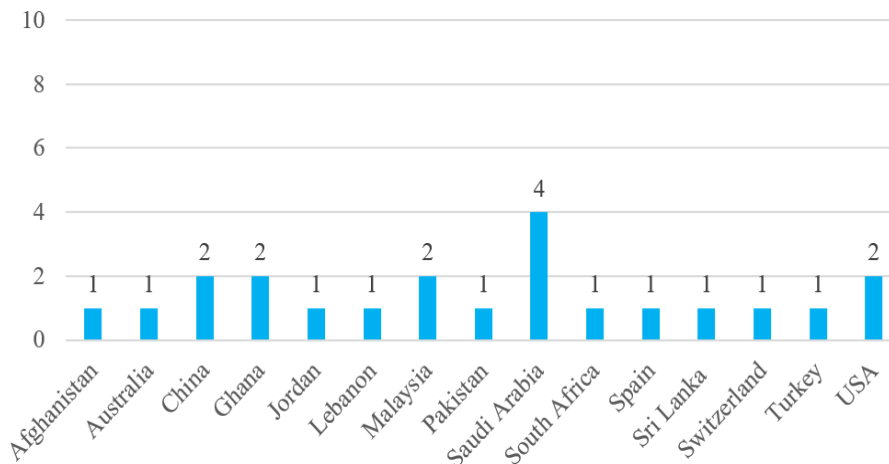
## RESULTS

### What Are the General Characteristics of Research on the Impact of SNS Use on Academic Achievement?

The results show that studies on using SNS and academic achievement were first conducted in 2014 (Figure 2). An increase in the number of studies per year, especially since 2019. In addition, it was found that most of the 22 articles studied (13 articles) were published after 2019 (2019-2022). Most of the articles were published in 2019. Interestingly, there is no article published in 2022. These results mean that an increasing number of studies on SNS and academic performance indicates a research trend on these two variables in the literature. All of the articles reviewed in this study used quantitative methods (e.g., Alamri, 2019; Malak et al., 2021; Sandanayake, 2021) to collect data on SNS and academic achievement. No other research method was not used by the researchers in these studies.

**Table 1.** Number of research participants (n)

| n                   | F | %    | Research  |
|---------------------|---|------|---|
| Between 1 & 100     | 3 | 13.6 | Abdulqader & Almunsour (2020), Nsizwana et al. (2017), & Sandanayake (2021)   |
| Between 100 & 300   | 9 | 40.9 | Alamri (2019), Alamri et al. (2020), Bou-Hamad (2020), Busalim et al. (2019), Glass et al. (2014), Khan et al. (2016), Leyrer-Jackson & Wilson (2017), & Rodríguez-Triana et al. (2020) |
| Between 300 & 500   | 6 | 27.2 | Chang et al. (2019), de-Marcos et al. (2014), Dzugbenuku (2019), Li et al. (2019), Malak et al. (2021), Munir et al. (2021), & Mushtaq and Benraghda (2018)                             |
| Between 500 & 1,000 | 2 | 9.0  | Barton et al. (2018) & Bitherman and Frempong-Kore (2021)   |
| More than 1,000     | 2 | 9.0  | Ainin et al. (2015) & AlFaris et al. (2018)   |



**Figure 3.** List of countries that conducted research (Source: Authors, using Microsoft Excel program)

**Table 2.** Measurements of students' achievement (MA)

| MA                                    | Research  |
|---------------------------------------|---|
| Assessment grades & quiz marks        | Sandanayake (2021)  |
| GPA                                   | Alamri (2019), AlFaris et al. (2018), Barton et al. (2018), Bou-Hamad (2020), Busalim et al. (2019), Glass et al. (2014), Khan et al. (2016), Leyrer-Jackson and Wilson (2017), & Malak et al. (2021) |
| Interactive tests & assignment scores | de-Marcos et al. (2014)   |
| Questionnaire items                   | Ainin et al. (2015), Alamri et al. (2020), Bitherman & Frempong-Kore (2021), Dzugbenuku (2019), & Munir et al. (2021)   |
| Multiple choice test                  | Rodríguez-Triana et al. (2020)  |
| Self-reporting                        | Abdulqader and Almunsour (2020)   |
| Perceived academic performance        | Chang et al. (2019)   |
| Self-rating scale                     | Li et al. (2019)  |
| Self-reported academic performance    | Nsizwana et al. (2017)  |
| NA                                    | Mushtaq and Benraghda (2018)  |

**Table 1** shows the distribution of research by the number of research participants. The most common research participants in SNS and academic achievement studies were between 100 and 300 (40.9%). This number of participants was followed by studies with sample sizes between 300-500 (27.2%) and 1-100 (13.6%).

The results in **Figure 3** show that most of the research on SNS and academic achievement was conducted in Saudi Arabia, with four studies (Abdulqader & Almunsour, 2020; Alamri, 2019; Alamri et al., 2020; AlFaris et al., 2018). Most other studies were conducted in China (Glass et al., 2014; Li et al., 2019), Ghana (Bitherman & Frempong-Kore, 2021; Dzugbenuku et al., 2019), Malaysia (Ainin et al., 2015; Busalim et al., 2019), and the United States (Barton et al., 2018; Leyrer-Jackson & Wilson, 2017). One article was published in the following countries, Afghanistan (Mushtaq & Benraghda, 2018), Australia (Khan et al., 2016), Jordan (Malak et al., 2021), Lebanon (Bou-Hamad, 2020), Pakistan (Munir et al., 2021), South Africa (Nsizwana et al., 2017), Spain (de-Marcos et al., 2014), Sri Lanka (Sandanayake, 2021), and Turkey (Chang et al., 2019).

The analysis showed that researchers used various data collection instruments to measure and assess students' academic achievement and performance in the studies reviewed (**Table 2**).

In particular, many researchers (e.g., Barton et al., 2018; Malak et al., 2021) mainly used GPA as a data source to measure and evaluate student performance among these instruments. On the other hand, researchers also used other data sources, including assessment grades, quiz marks (e.g., Sandanayake, 2021), Interactive tests and assignment scores (e.g., de-Marcos et al., 2014), multiple-choice tests (e.g., Rodríguez-Triana et al., 2020), self-reporting (e.g., Abdulqader & Almunsour, 2020), perceived academic performance (e.g., Chang et al., 2019), self-rating scale (e.g., Li et al., 2019), Self-reported academic performance (e.g., Nsizwana et al., 2017), to assess achievement and performance. These are interactive tests and assignment grades and scores, questionnaire items, multiple-choice tests, self-reporting, perceived academic performance, quiz marks, self-rating scale, and self-reported academic performance.

## **What are the Research Findings on the Influences of SNS Use on Academic Achievement?**

### ***Positive influences of SNS on academic achievement***

Most of the research studies reviewed in this study reported positive results regarding the effects of SNS on academic achievement. For example, Barton et al. (2018) found that social media use and attention significantly predicted academic performance. They also found that motivation better predicted academic performance than social media use. Munir et al. (2021) reported a significant and positive impact of actual social media use on academic performance. Sandanayake (2021) indicated that university students appreciated using state-of-the-art social media in learning. However, they did not provide statistical results to support their argument. Bitherman and Frempong-Kore (2021) indicated that most university students indicated that SNS positively influenced their learning. Alamri et al. (2020) showed significant relationships between using SMAs and other variables, including students' academic performance (SAP).

Abdulqader and Almunsour (2020) reported that in their study, 43% of participants reported that using social media for learning helped improve their grades. Dzogbenuku et al. (2019) pointed out that social media information, innovation, and entertainment significantly impacted social media knowledge generation, which has far-reaching implications for learning and knowledge management. The study also showed that computer technology knowledge moderates the relationship between social media and student performance. Busalim et al. (2019) found that Facebook addiction significantly impacted student academic achievement in both samples, and the frequency of Facebook use was a positive predictor of Facebook addiction. Chang et al. (2019) reported that while the academic type of social media activity and task-related compulsive Internet use positively affected perceived academic performance, non-task-related compulsive Internet use negatively affected perceived academic performance. Alamri (2019) found a statistically significant relationship between the purpose of social media use and students' GPAs. Li et al. (2019) found a significant correlation between SNS addiction, learning eagerness, and academic performance. Khan et al. (2016) found that social media use was significantly associated with students' grades. Nsizwana et al. (2017) showed that time spent on social media predicts students' academic success and that class participation leads to a better academic success rate. There is a correlation between academic success rate and time spent on academic activities.

According to de-Marcos et al. (2014), two teaching approaches using SNS performed better than a traditional e-learning approach regarding academic performance on hands-on tasks. In another research, Ainin et al. (2015) showed a positive relationship between SAP and Facebook usage, i.e., the higher the usage, the better the perceived performance. On the other hand, a study by Malak et al. (2021) found an indirect effect of social media addiction on academic performance.

### ***Negative influences of SNS on academic achievement***

The analyses also revealed that some studies reported negative influences of SNS on academic achievement. Rodríguez-Triana et al. (2020) found that simple behavioral engagement measures did not predict academic performance. Bou-Hamad (2020) found that social media use negatively affected academic performance. AlFaris et al. (2018) found no significant relationship between grade point average and frequency of daily use of SM or during lectures. A study by Leyrer-Jackson and Wilson (2017) found that the grade point average was negatively correlated with the number of social media websites students subscribed. They also found that using more social media sites positively correlated with students' daily time on social media platforms. Glass et al. (2014) reported that problematic social network use negatively impacted



academic performance. They emphasized that students who spend excessive time on SNS were likelier to have poorer academic performance. Mushtaq and Benraghda's (2018) results showed no statistically significant differences between social media's positive and negative effects and students' academic achievements.

## DISCUSSION

The present study aimed to analyze the influences of SNS on university SAP. In general, most of the articles have reported positive and significant results on the impact of SNS on academic achievement. This result is similar to that of Astatke et al. (2021), who found that few studies have reported the positive effects of using SNS on students' academic achievement, while they found other usages of SNS instead of educational purposes harmed students' academic achievement in much research.

However, the findings in this research have also revealed that some studies have reported the negative effects of SNS on academic achievement. This finding confirms the results of Astatke et al. (2021). According to their results, many studies reported the negative effects of SNS on academic achievement. They indicated that excessive use of SNS, inappropriate use of SNS, and use of SNS for other leisure activities instead of educational purposes were detrimental to students' academic achievement. Similarly, a meta-analysis study by Huang (2018) found a low mean correlation between SNS use and academic achievement.

As in the studies reviewed in this study, it can be said that the research findings can be valuable to use SNS to improve academic performance when SNS are used for course and educational purposes. Most of the research reviewed in this study has reported a positive impact of SNS on university students' academic achievement. Contrary to the findings of Astatke et al. (2021), this study's findings indicate that SNS can help enhance the academic achievement of university students. For example, a study by Chang et al. (2019) found that academic type of social media activity and task-related compulsive internet use positively impacted perceived academic performance. They also found that non-task-related compulsive internet use negatively influenced university students' perceived academic performance. When the positive and negative effects of SNS on academic achievement are examined, based on the results of this study, it is quite difficult to indicate that the studies have not reached a consensus on the impacts of SNS on academic achievement.

The results regarding the publication year of the reviewed studies showed an increase in the number of studies, especially since 2019. It was found that most of the 22 articles studied (13 articles) were published between 2019 and 2022. This finding can be explained by the rapid growth of communication technologies among university students and the need to research to examine the effects of SNS on achievement (Astatke et al., 2021; Nannim et al., 2023).

The results on the data collection methods in the articles examined showed that all the articles examined in this study used quantitative methods to collect data on SNS and academic achievement. No other research method was not used by the researchers in these studies. Such a result is normal because the most fruitful research method is quantitative to measure and evaluate the impact of SNS on achievement. Another reason for using quantitative studies on SNS and performance might be related to the advantages of quantitative methods. This research method allows researchers to generalize results based on statistical tests, draw conclusions about the effects of variables on each other, and provide the opportunity to work with large samples. It is well known that quantitative methods are most often preferred in studies investigating SNS and achievement. This finding is largely consistent with that of Astatke et al. (2021), who found that most studies used a quantitative design to research SNS and secondary students' academic achievement. They found that 25 of the 27 articles they reviewed used a quantitative design to collect data on SNS and achievement at the secondary school level.

The results regarding the number of study participants showed that the researchers used the most participants, between 100 and 300. The reasons for this result could be related to the fact that the researchers selected the appropriate participants. The results regarding the countries, where the researchers conducted research show that most of the research was conducted in Saudi Arabia. The following countries were China, Ghana, Malaysia, and the United States. This result may explain the researchers' interest in SNS and academic performance depending on the countries, where the research was conducted.

The results also revealed that researchers used various data collection instruments to measure students' academic achievement or performance. The main data source to measure achievement and performance was GPA in the reviewed studies. In addition, researchers also used other data sources, including assessment grades, quiz marks, interactive tests and assignment scores, multiple-choice tests, self-reporting, perceived academic performance, self-rating scale, and self-reported academic performance. This finding is very similar to those of Astatke et al. (2021), who found that GPA primarily measured academic achievement. The result is also similar to those of Veretennikova et al. (2020).

## CONCLUSIONS

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The present review aimed to investigate the impact of SNS on the academic performance of university students. To this end, research articles published in the journals of the SCOPUS database were systematically reviewed. The results of this study show that most articles reported positive influences of SNS on academic achievement. On the other hand, some studies have reported the negative influences of SNS on achievement. Very few studies have shown mixed results regarding the influence of SNS use on academic achievement (e.g., Chang et al., 2019). Several studies concluded that using SNS among university students positively and/or significantly impacts their achievement. To our knowledge, the present review study has the potential to add new evidence to the literature and fill a research gap to investigate the influence of SNS on university students' academic achievement. Given the lack of review studies on the use of SNS and academic achievement at the university level, the results of this study have the potential to contribute to the literature and add new insights to researchers' knowledge.

## Recommendations

When the results are examined, it appears a dearth of longitudinal studies on the effects of SNS on academic achievement. Researchers must conduct and have conducted long-term studies to better understand the relationship between SNS use and academic achievement. University students and individuals may use the SNS platforms for various purposes and in many ways. In particular, the usage of each individual or student varies depending on their usage purposes. Therefore, based on the results of this study, it is impossible to indicate that SNS use is the same or similar in the studies examined. For this reason, further studies are needed to examine the influences of SNS on academic achievement in experimental settings. Some studies reviewed did not examine and report the impact of mediator and moderator variables on SNS use and academic achievement. Therefore, future research should examine the effects of some mediator and moderator variables on SNS use and academic achievement. This will allow researchers to uncover the background factors influencing the relationship between SNS and academic achievement.

## Limitations

This review study of SNS and academic achievement has some limitations. First, the peer-reviewed articles used in this systematic review were limited to one database. Because conducting systematic review research in many databases takes much more time, this study was limited to one database. Therefore, it is difficult to indicate that this systematic literature review was not fully comprehensive. Second, empirical peer-reviewed journal articles in English were included in the analysis in this review. The analysis did not include other publications, such as book chapters, conference papers, and dissertations. Further research is needed to examine other databases on the effects of SNS on academic achievement to support the arguments and claims presented in this study. Third, some studies reported students' opinions about using SNS and their achievements without conducting statistical and in-depth qualitative analyses. The results of this research may contribute to the inconsistency of the effects of SNS on academic achievement.

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**Declaration of interest:** Authors declare no competing interest.

**Data availability:** Data generated or analyzed during this study are available from the authors on request.



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## APPENDIX A

**Table A1.** List of variables used in this systematic review

| No | Study                              | Country      | n     | MA                                    | DS           |
|----|------------------------------------|--------------|-------|---------------------------------------|--------------|
| 1  | Abdulqader and Almunsour (2020)    | Saudi Arabia | 75    | Self-reporting                        | Quantitative |
| 2  | Ainin et al. (2015)                | Malaysia     | 1,165 | Questionnaire items                   | Quantitative |
| 3  | Alamri (2019)                      | Saudi Arabia | 132   | GPA                                   | Quantitative |
| 4  | Alamri et al. (2020)               | Saudi Arabia | 215   | Questionnaire items                   | Quantitative |
| 5  | AlFaris et al. (2018)              | Saudi Arabia | 1,720 | GPA                                   | Quantitative |
| 6  | Barton et al. (2018)               | USA          | 659   | GPA                                   | Quantitative |
| 7  | Bitherman and Frempong-Kore (2021) | Ghana        | 800   | Questionnaire items                   | Quantitative |
| 8  | Bou-Hamad (2020)                   | Lebanon      | 112   | GPA                                   | Quantitative |
| 9  | Busalim et al. (2019)              | Malaysia     | 240   | GPA                                   | Quantitative |
| 10 | Chang et al. (2019)                | Turkey       | 489   | Perceived academic performance items  | Quantitative |
| 11 | de-Marcos et al. (2014)            | Spain        | 371   | Interactive tests & assignment scores | Quantitative |
| 12 | Dzogbenuku (2019)                  | Ghana        | 373   | Questionnaire items                   | Quantitative |
| 13 | Glass et al. (2014)                | China        | 209   | GPA                                   | Quantitative |
| 14 | Khan et al. (2016)                 | Australia    | 126   | GPA                                   | Quantitative |
| 15 | Leyrer-Jackson and Wilson (2017)   | USA          | 234   | GPA                                   | Quantitative |
| 16 | Li et al. (2019)                   | China        | 406   | A self-rating scale                   | Quantitative |
| 17 | Malak et al. (2021)                | Jordan       | 343   | GPA                                   | Quantitative |
| 18 | Munir et al. (2021)                | Pakistan     | 403   | Questionnaire items                   | Quantitative |
| 19 | Mushtaq and Benraghda (2018)       | Afghanistan  | 371   | Academic Performance: NA              | Quantitative |
| 20 | Nsizwana et al. (2017)             | South Africa | 68    | Self-reported academic performance    | Quantitative |
| 21 | Rodríguez-Triana et al. (2020)     | Switzerland  | 149   | Multiple choice test                  | Quantitative |
| 22 | Sandanayake (2021)                 | Sri Lanka    | 94    | Assessment grades & quiz marks        | Quantitative |

Note. n: Number of participants; MA: Measurements of achievement; & DS: Data source

