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## The Impact of Social Media on the Educational Attainment of Engineering Students under Conflict and Siege Conditions at Taiz City, Yemen

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## تأثير وسائل التواصل الاجتماعي على التحصيل التعليمي لطلبة الهندسة في ظل ظروف النزاع والحصار في مدينة تعز، اليمن

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### الملخص

يهدف هذا البحث إلى دراسة تأثير منصات التواصل الاجتماعي على التحصيل الأكاديمي لطلاب الهندسة في جامعة تعز، اليمن. تم اعتماد منهجية كمية وصفية استخدمت استبانة مقياس ليكرث ذات الخمس نقاط والذي استهدف 310 مستجيباً من ست تخصصات هندسية حلت إحصائياً باستخدام برنامج SPSS. حدثت هذه الدراسة تأتي من المستجيبين من مجتمع فقير وغير مستقر بسبب الحرب الأهلية والحصار المفروض على مدينة تعز منذ ما يقرب من عقد من الزمن. تم اعتبار المعدل التراكمي للطلاب كمقياس لتحصيلهم التعليمي في تحليل بيانات البحث.

تم الحصول على نتائج مثيرة للاهتمام في هذه الدراسة، والتي تعتبر بالغة الأهمية للجامعات والطلاب وأعضاء هيئة التدريس والأسر. أشارت النتائج إلى أن طلاب الهندسة اليمنيين يعززون استخدامهم لمواقع التواصل الاجتماعي لزيادة تحصيلهم الأكاديمي في ظل غياب المنصات التعليمية الرسمية في الجامعات اليمنية، في حين أن آثارها السلبية طفيفة. علاوة على ذلك، فإن منصات التواصل الاجتماعي تجعل الطلاب يتواصلون بشكل فعال مع الخبراء والمتخصصين لأغراض التدريب. وأكد الطلبة أن منصات التواصل الاجتماعي عوضت النقص في أعضاء هيئة التدريس، والتطبيقات العملية، وأتاحت لهم التواصل مع الخبراء في تخصصاتهم. وأثنى ما توصلت إليه هذه الدراسة هو عدم وجود علاقة إحصائية بين الاستخدام المفرط والإدمان على مواقع SM مع المعدل التراكمي للطلاب، مما يشير إلى أن طلاب الجامعات في اليمن يستخدمون منصات التواصل الاجتماعي في كثير من الأحيان لدراساتهم وليس لتضييع وقتهم. توصي هذه الدراسة بإجراء المزيد من الدراسات لطلبة الجامعات، وخاصة في اليمن حيث يسود مستوى الفقر المرتفع وعدم الاستقرار السياسي.

**الكلمات المفتاحية:** التحصيل الدراسي؛ المنصات التعليمية؛ المعدل التراكمي للطلاب؛ الإفراط في استخدام وسائل التواصل الاجتماعي.

## The Impact of Social Media on the Educational Attainment of Engineering Students under Conflict and Siege Conditions at Taiz City, Yemen

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### Abstract

This study investigated the influences of Social Media (SM) platforms on the academic achievement of engineering students at Taiz University, Yemen. A descriptive quantitative approach of five-point Likert scale questionnaire targeting 310 respondents from six engineering disciplines has been statistically analyzed using SPSS software. The novelty of this study comes from the poor and unstable respondents due to the civil war and siege imposed on Taiz City for almost a decade. The GPAs of students were considered as a measure of their educational achievement.

Interesting findings are obtained from this study, which are critical for universities, students, faculty members, and families. The results indicated that Yemeni engineering students maximize their SM usage to enhance their academic achievement in the absence of official educational platforms in Yemeni universities, while its adverse effects are minor. Furthermore, SM platforms make students effectively communicate with experts, specialists, and for training purposes. This study recommends conducting more studies for university students, especially in Yemen where high poverty level and political instability are dominant.

**Keywords:** Academic achievement; Educational platforms; Students GPA; Social Media Overuse.

## Introduction

Social Media (SM) sites are amongst the most controversial inventions of the 21st century that have revolutionized social, economic, political, educational, and information fields. Recent years have witnessed a qualitative shift in exploring the different capabilities of mobile devices, and an uncountable number of applications have been created to take advantage of them. Surely, mobile phones have transformed into tools to accomplish daily tasks, businesses, education, and well-being [Taylor, S. H., et al., 2021]. Again, SM platforms have become efficient tools for studies, conferences, articles, books, magazines, newspapers, associations, and professional and service organizations [Sobaih, A. E. E, et al., 2020; Mishra, S., 2019]. Accordingly, thousands of research articles were published worldwide to investigate the social, financial, political, information, and educational influences of SM networks [Schreiner, M., et al., 2021; Aichner, T. et al., 2021; Orben, A. 2020]. It is recorded that, up to 2019, more than eighty thousand articles were published about SM networks and their divergent impacts [Hamadi, M. et al., 2022].

SM networks shaped public opinion and facilitated services among their users [Ausat, A. M. A. (2023); Tsoy, D. et al., 2021]. These social technologies resulted in repercussions that contributed effectively to shaping many features of societies intellectually, socially, and scientifically. It has drastic consequences on almost all generation eras, from childhood, young, adults, and eager. University students are at the core of this attraction and interest, causing fundamental shifts in interaction patterns and communication approaches [Manca, S., 2020; Perez, E., et al., 2023]. In other words, education is an essential field that has shown a dramatic reaction due to social networks in the last two decades [Jogezai, N. A. et al., 2021; Chugh, R. et al., 2021; Beemt, A. V. D., et al., 2020]. The pedagogical arguments suggest that SM platforms use in HEIs enhances students' learning qualities. As a merit, students have undoubtedly utilized the social network for their academic achievements. However, most students waste their time, efforts, and money while communicating with others electronically. In Yemen, students have many contributions to Facebook and WhatsApp as SM platforms [Amrani, M. et al., 2023]. To this, it is hard to measure SM impact on the education attainment of undergraduate engineering students.

Implementing SM applications helps simplify the way of life of individuals and form social, educational, and cultural behaviors that can influence the perception of individuals and societies. It enables them to connect with diverse groups of people with recognized social, financial, and technical capabilities. Furthermore, SM is extremely fundamental because it facilitates smooth access to resources, knowledge, and capital for entrepreneurs. It also collects basic information from and to the broader community [Aichner, T., et al., 2021]. Scientists and academics have assigned it an essential role at the beginning of the success of projects in any aspect. The lives of individuals and their relationships with society are also influenced by SM usage.

Recently, there has been a lot of speculation about the role that SM sites play in shaping young mentality in our societies [Schreiner, M., et al., 2021; Aichner, T., et al., 2021; Orben, A., 2020]. Divergent opinions suggest that SM has morally corrupted individuals, families, and society, while others believe that it has a pivotal role in strengthening social ties, enhancing the educational attainment of school and university students, and facilitating students' communication with experts. Among these divergent opinions, it was necessary to answer a fundamental question about the impact of SM platforms on students' academic attainment.

The impact of SM has even reached academic institutions that deal with individuals from different domains [Mishra, S., 2019]. SM sites provide students access to more relevant information and group interaction. Furthermore, students and universities can emphasize their learning approaches through SM applications. SM plugins facilitate sharing and interacting within these networks. More importantly, students via SM sites can access online tutorials and educational sources for better achievement [Jogezai, N. A., et al., 2021; Chugh, R., et al., 2021; Beemt, A. V. D., et al., 2020].

Many definitions have been proposed for SM and educational attainment [Ansari, J. A. N., 2020]. SM sites can be defined as media that supports communication between individuals, institutions, and groups with the same interests who are present on the Internet to share information and knowledge, literary and scientific achievements, and exchange opinions and viewpoints

between these parties. Accordingly, these profound exchanges, participation, and communication take place using the services provided by these networks. Many research studies from different cultures and communities listed key points regarding the importance of SM platforms in raising academic achievement [Jogezai, N. A., et al., 2021; Chugh, R., et al., 2021; Beemt, A. V. D., et al., 2020] [AlOqlah, R. M. A. 2023], which can be assembled in the following four points: (1) SM sites open students' minds to search, learn, and discuss everything new, (2) SM platforms expand educational sources after they previously relied solely on the book and the teacher. They provided direct communication with university professors or websites that issue educational content. Obtaining information, free books, and resources has become easier with SM sites, (3) SM sites provide diverse, flexible, and collaborative educational approaches, and (4) SM sites offer a change and development in the educators' experiences and skills through implementing technological applications and working in the digital environment. Also, it helps them to develop their professional practices to raise educational performance.

In contrast, research articles provided a summary of key points on the drawbacks of SM overuse on the students' academic achievement [Purvis, A. J., et al., 2020; Dzvapatsva, G. P., et al. 2014]: (1) students who are addicted to SM suffer from insomnia, fatigue, and lack of sleep, neglecting academic activities, (2) students become passive as they become fully dependent on SM sites, which causes changes in their behavior, making their morals worsening and personality and self-confidence weakened, (3) learners spend most of their daily lives on SM instead of focusing on their educational activities, losing their efforts, time, and money, (4) most students misuse SM by creating fake accounts for entertainment, leading them to addiction, and (5) many bloggers and writers publish false and inappropriate information on SM applications, which destroys the reliability of the educational system.

To conclude, academic achievement is an important measure that determines the educational level of students and how they interact with the environment surrounding them. Good academic achievement of students means more appreciation and respect from colleagues, teachers, family, and society. This promotion depends primarily on the student's abilities, experiences, skills, and training that the student must acquire. Societies must

deal with SM sites as a reality that cannot be avoided, and they must exert all efforts to exploit their positives and avoid their negatives. The younger generations in schools and universities are the most affected people in society [Abdalnour, H. et al., 2023]. Accordingly, researchers worldwide focused on studying the social, psychological, and economic effects of SM on students' educational attainment. This research is consistent with global efforts to study this phenomenon in a new environment that has not been studied before.

### **Objectives of the study**

This study provides scientific knowledge that may benefit researchers in the field of education and those interested in the field of modern technology in Yemen. It investigates this research problem in an environment that is completely different from other communities, in which the students under study face many barriers, such as poverty, war consequences, and the lack of easy transportation. This research attempts to eliminate the growing concerns of society regarding the use of SM sites by university students in Yemen. Many questions are still not answered in this regard. How the country's circumstances and current civil war in Yemen affect the students' productivity. What is more, many aspects must be addressed, such as the mediation of gender on the main topic, and how it affects the students whose specialization is related to computer science and IT students. Furthermore, do senior students have a better response to SM than fresh students? This study attempts to scientifically answer such questions.

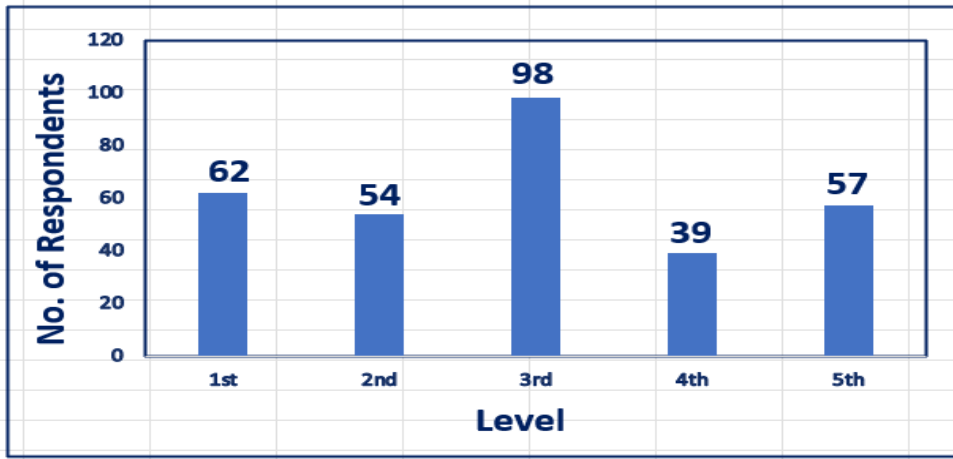
### **Methodology**

The study employed a quantitative scientific approach based on a structured questionnaire that targeted 310 engineering students from Taiz University. It describes the study population and sample, the laborious procedures in constructing the research instrument, extracting its validity and reliability, the appropriate statistical methods, and techniques to achieve its objectives, as explained in the following subsections. A descriptive-analytical method was used to describe the impact of university students' use of SM platforms on academic achievement.

### **Data Collection**

Data were collected from primary and secondary sources, including demographic and educational information about the study population from

the prescribed engineering college or by introducing direct questions to the respondents. The primary data was collected by implementing a structured 5-point Likert scale questionnaire as the main tool for the study. The research questionnaire was designed, revised, and evaluated by the arbitration of academic experts. After that, the questionnaire was distributed to the study sample. Secondary data were collected mainly from the engineering college and faculty members. Secondary data was also gathered from the literature review represented by both Arabic and English articles and books related to the subject of the study.



**Figure (1) Diagram records the questionnaire sample based on their study level.**

Students of the Faculty of Engineering and Information Technology at Taiz University are the study population that is ~ 1500 students from six specializations and five levels. The questionnaire was randomly distributed to the engineering students manually after their lectures, and the response was 310 respondents out of them, 88 students were females. Figure (1) elucidates the distribution of questionnaire students amongst all studying levels, with a high percentage from the third level. The figure results indicate that all study levels have participated in the questionnaire, which makes the outcome more reliable.

Figure (2) explains the questionnaire sample distribution based on their specialization. The results show that the sample constitutes students from six engineering disciplines. Students from networking engineering and IT provide high response rates, while students of the mechatronics engineering



department (36 students) and Communications Engineering (40 students) are the lowest students among all disciplines. Generally, the distribution indicates that all engineering departments participated in the questionnaire.

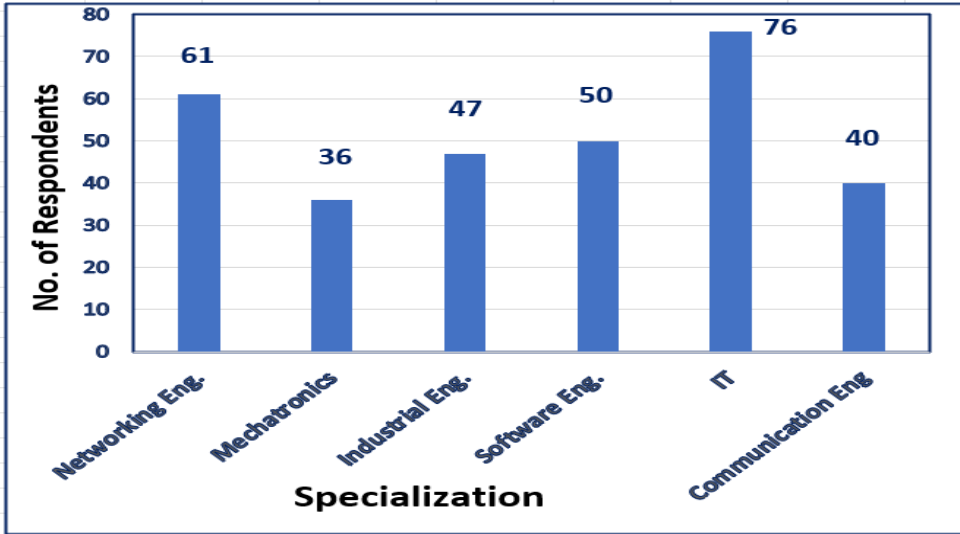


Figure (2) A histogram records the questionnaire sample based on their specialization.

## Research Design

The questionnaire was professionally designed to answer research questions. Initially, respondents were asked questions regarding their personal information, whether they have personal laptops and smartphones, university GPAs, and high school GPAs. After that, general questions were asked regarding SM usage, such as the preferred platforms they frequently use, and the time spent on them. What are the most important SM sites that are most beneficial to them in their academic achievement, and which are the most time-wasting? Students were also asked a critical question regarding SM addiction as a research variable, in which they were asked what the optimal time he/she spent studying their classes was without opening SM platforms; the choices were in the range of less than 10 minutes and more than two hours. Another question was directed to students about the average time they spent on SM sites every day, which is a suitable question to address the SM overuse variable.

The second portion of the survey was a list of questions designed according to 5-point Likert scale requirements. It constitutes 24 questions in four

sections that were asked to the respondents that determined the extent of their interaction with social networking sites, its benefit on their academic achievements, and its impact on their behavior and well-being. Also, the most critical negatives of SM platforms' excessive use and addiction to them were investigated.

The researcher selected engineering students who belong to a public university due to their technical proficiency, good communication with computer software and technology, and the high intellectual capabilities of engineering students. Notably, engineering students take their studies more seriously, and perhaps they will answer the questionnaire seriously too. Furthermore, a research population of a specific discipline makes this study more subjective and interesting.

### Research Hypothesis

This research suggests the following hypothesis:

- H1:** Female students are addicted to SM platforms more than their male counterparts.
- H2:** Students with high GPAs in secondary school have high GPAs at university.
- H3:** Computer-related specialization students are addicted to SM sites more than others.
- H4:** Junior students are addicted to SM sites more than senior students.
- H5:** Living stability positively impacts the academic achievement of university students.
- H6:** excessive use and addiction to SM sites negatively impact academic achievements.

### Research Analysis Tools

The validity of the topic was tested through investigation in the literature review whether it was studied before or not, and its importance for the current young generation who are addicted to SM in Yemen. It clarifies and refutes doubts whether SM use is useful to undergraduate students or not, and what the best way to make these platforms enhance students' academic attainment. The reliability of the research could be obtained from the evaluation and judgment steps the researcher followed, the validity of the topic how this research contributes to filling a gap in Yemeni society.

The stability of the tool was verified using Cronbach's alpha coefficient to further confirm the stability of the tool to determine the consistency and homogeneity of the items. With each other at the level of one field and at the level of the fields of the tool, if the value of the Cronbach's alpha coefficient for the fields of the tool reaches the degree of importance more than (0.92), it is a high reliability value that confirms the stability of the tool and its validity for research purposes.

After completing the questionnaire responses, the responses were tabulated in Excel and numbered based on a five-point Likert scale for statistical analysis. Statistical Packages for the Social Sciences (SPSS) Software and the R-Studie program were used for the analysis. Linear Pearson analysis was selected to represent the data. Cronbach's alpha coefficient was implemented to calculate the internal consistency reliability of the items and areas of the study tool. While Arithmetic means and standard deviations were recorded to determine the impact of SM on academic achievement among engineering college students.

A T-test was implemented for evaluating two independent samples to determine the differences and their statistical significance between the responses of the sample members regarding the impact of SM use and educational attainment. Also, analysis of variance test to determine the differences and their statistical significance between the responses of sample members regarding the impact of SM use and academic achievement according to the variables (gender, specialization, level).

## Results and Discussion

This section deals with questionnaire data results that targeted engineering students to understand their interaction with SM platforms and their effects on the educational attainment of students. The analysis includes educational, social, economic, and political influences on the well-being and academic achievement of engineering students. It will address the influences of many dependent and independent variables that are essential for understanding the problem of this research. In other words, the SM platforms' use and interaction rates variables will be compared with the students' GPAs to explain the correlations between them.

Figure (3) shows the percentage of usage rate of SM platforms: WhatsApp, Facebook, Telegram, Instagram, and Twitter. Each student was asked a direct

question: what are the SM sites that you frequently use on your phone? The results are obvious in that 98.4% of Yemeni students use WhatsApp as a main SM website followed by Telegram (86.7% and then Facebook (74.35%). These percentages are below the global percentage of SM users worldwide, which exceeded 90% in 2018 [Chugh, R., et al. 2018]. Furthermore, Engineering students indicated that Twitter is the lowest SM platform they often use at 35.1% followed by Instagram at 46.43%. As a conservative society, College of Engineering students and Yemeni people prefer SM platforms that provide more privacy regulations, such as WhatsApp and Telegram.

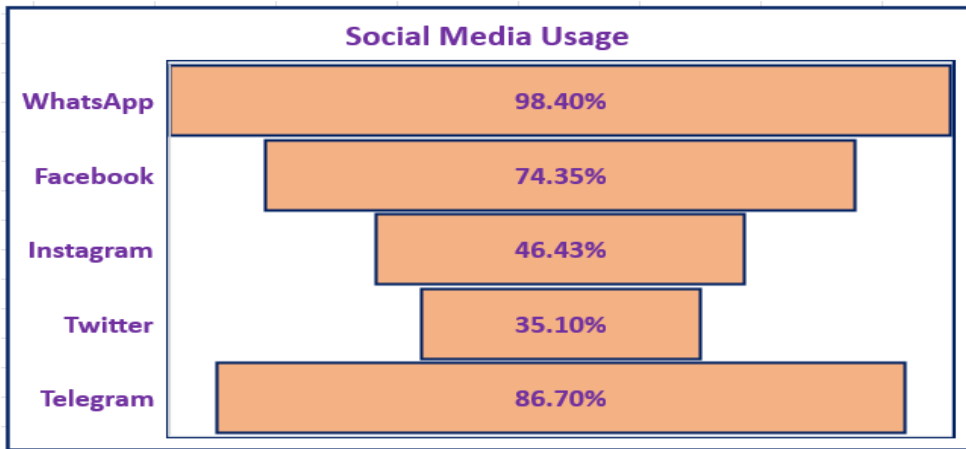


Figure (3) A diagram illustrates the usage percentage of SM platforms for engineering students in College of Engineering students.

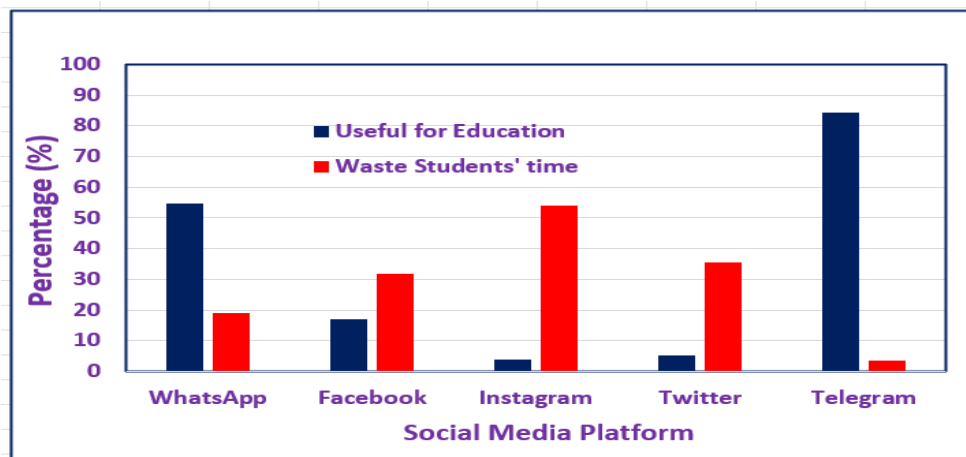


Figure (4) A histogram records the responses of engineering students about the SM usefulness tools to enhance academic achievement.

Respondents provide their answers regarding which SM platform is useful for their education and which one is time wasting. Figure (4) points out engineering students' responses. They indicated that Telegram is the best SM tool for education while Twitter and Instagram are the most SM platforms wasting students' time. Beyond that, engineering students pointed out that Instagram is the most SM tool for wasting their time and distracts them from studying their lessons. Twitter and Facebook came in the second step as platforms that do not enhance their education life. These results are consistent with other studies in literature [Habes, M, et al., 2018; Hou, Y, et al., 2019; Manca, S., 2020; Moorthy, K., et al., 2019; Manca, S., et al., 2016].

Two key points make Telegram an attractive educational platform; the first one is its security and privacy tools, especially for female students in conservative societies; the second is that the Telegram platform is well linked to educational sites, capable of downloading their educational requirements, and establishing educational groups with additional features than other SM tools.

Students also mentioned that the WhatsApp platform is a good tool for understanding their studies. That is plausibly due to its use as an educational platform by lecturers in the university. Lecturers often open interactive WhatsApp groups with their students to better communicate with them and clarify their doubts about their studies.

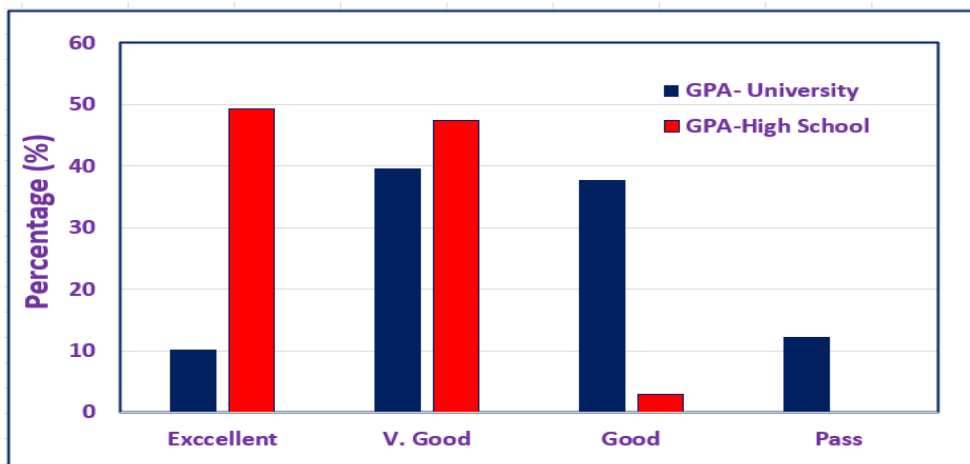
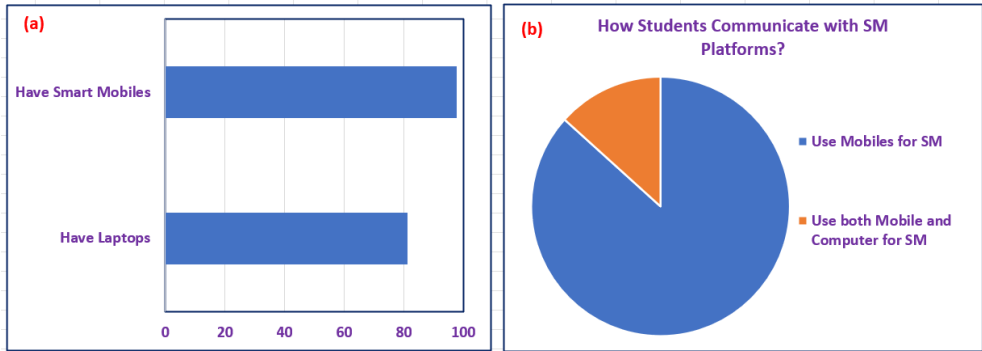


Figure (5) A histogram of students' GPA scores in high school and at university.

Figure (5) depicts the Grade Point Average (GPA) of students under study in high school and now at engineering college. The results indicated a steep decline in students' scores between university and high school. Statistically, almost 50% of the respondents got excellent grades in high school, and this percentage decreased to 10% in engineering college. This could be explained in two directions: (1) the difficult courses in engineering studies and (2) the corrupted system of secondary school exams and evaluation. Finally, the diagram shows that data fits well with the natural distribution, which indicates the high quality of the engineering college educational system.



**Figure 6. (a) Percentages of respondents who have laptops and smart phones and (b) a diagram explains how students communicate with SM platforms.**

**Figure 6(a)** illustrates the percentage of engineering students with laptops or smartphones. In fact, these indicators are essential in explaining the role of SM platforms in enhancing the academic attainment of engineering students. Unexpectedly, the results indicate high percentages of these variables, indicating that 81.3% of respondents have laptops or personal computers. Furthermore, almost all respondents indicated that they have smartphones sufficient to communicate with SM platforms 97.73%. Similarly, **Figure 6(b)** explains how students communicate with SM platforms. The results showed that all students use their phones for SM purposes, and only 13.33% of students use their phones and personal computers for this purpose.

**Table (1) Descriptive statistics of primary variables depicted from questionnaire data.**

VARIABLE	N	Min	Max.	SUM	Mean	S. D.	Var.
Sex	310	1.00	2.00	532	1.72	0.45	0.21
Computer-related Specialization	310	1.00	5.00	1124	3.63	1.51	2.27
Level of Study	310	1.00	5.00	906	2.92	1.35	1.83
Have a Laptop	310	1.00	2.00	561	1.81	0.39	0.16
Have a Smartphone	310	1.00	2.00	613	1.98	0.15	0.02
GPA-Secondary School	310	1.00	5.00	1055	3.4	1.03	1.06
GPA- University	310	1.00	5.00	1073	3.46	0.88	0.78
Living Stability	310	1.00	5.00	1138	3.67	1.69	2.84
Density of SM Usage	310	1.00	5.00	848	2.74	1.04	1.08
Addiction To SM Platform	310	1.00	5.00	728	2.35	1.13	1.28

Table (1) records the mean, standard deviations, Variance, and maximum and minimum limits related to the study variables; the results of the "mean" for the "Sex" variable ( $\mu=1.72$ ) indicate that most respondents are male students and most of the respondents belong to specializations close to computer science ( $\mu= 3.63$ ); furthermore, the results of the "mean" indicated that more than 80% of students have laptops and ~ 98% have smartphones. The most important results are that less than half of engineering students face excessive use of SM sites ( $\mu=2.74$ ), and less than 50% of students are addicted to SM networks ( $\mu=2.35$ ). These high values indicate that 43% of Yemeni students exercise the excessive use of SM sites and 33.75% are addicted to SM platforms; these rates are threatening and require rapid manipulation from individuals, HEIs, and society. The value of "mean" at ( $\mu=2.92$ ) for the level of study, which is close to the average value, indicates the natural distribution of respondents for all levels. Finally, more than 60% of students indicated they are stable and residing safely with their families.

Table (2) shows the Pearson statistical analysis of the data. It examines the linear correlation of variables with each other, and the values in the table depict the correlation factors of the corresponding variables. Negative values indicate inverse proportionality, while positive values indicate direct proportionality between the study variables.

Table (2) Pearson's linear Correlation factors of primary variables

	Variable	B	C	D	E	F	G	H	I	J	K
B	Sex	1	-.233**	-.137*	-.032	-.096	-.143*	-.011	-.255**	-.05	-.097
C	Computer-related Specialization		1	-.065	.032	.034	.006	.043	.140*	-.008	.006
D	Level of Study			1	.264**	.152**	.048	-.130*	.047	.130*	.062
E	Have a Laptop				1	.203**	-.002	.058	.115*	.090	.077
F	Have a Smartphone					1	-.025	.030	.022	.045	.028
G	GPA-Secondary School						1	.268**	.116*	.064	.115*
H	GPA- University							1	-.009	.003	-.022
I	Living Stability								1	-.044	.101
J	Excessive Use of SM									1	.238**
K	Addiction To SM Platform										1

The results of Table (2) are informative and have many implications. The results showed that most female respondents belong to computer-based specializations, and they have laptops and smartphones more than their male counterparts. Furthermore, Females had scored better grades in secondary schools and at university than their male counterparts. Also, the results showed that females are more stable than male students, in which the number of females who live with their families is larger than males. Interesting results indicate that females are slightly more in terms of excessive usage ( $f = -0.233^{**}$ ) and addicted to SM websites ( $f = -0.137^{**}$ ) than their male counterparts. These results correlated well with hypothesis **H1**.

One crucial finding from Table (2) is that there is a good correlation between the GPAs at high schools and university at correlation factor ( $f = 0.268^{**}$ ), which is in accordance with hypothesis **H2**. In other words, excellent grades in secondary schools have also excellent grades at university, and vice versa. This is also a good indication of the high-quality education in both educational stages. Furthermore, the results indicated that students from computer-related specializations showed a neutral impact on the addiction to SM platforms, which is against hypothesis **H3**. Besides, the results of the correlation factor ( $f = 0.062$ ) point out that senior students are slightly more likely to be addicted to SM usage than junior students, which is correlated well with hypothesis **H4**.



The results indicate that high-level students have laptops more than fresh students. Fresh students score higher grades than senior students. Also, living with family has negligible effects on students' academic attainments at university, which is inconsistent results with the hypothesis **H5**. This outcome is in line with previous study performed for engineering students in Yemen [Abdalnour, H. et al., 2023] There is a positive correlation between the excessive usage of SM platforms and the addiction to SM platforms ( $f= 0.238^{**}$ ).

Finally, the most important result, which is related to this study topic, is that there is no correlation between excessive usage ( $f=0.003$ ) and, to some extent, addiction to SM sites ( $f= -0.022$ ) and the university grades, which are inconsistent results with hypothesis **H6**. This indirectly indicates that students addicted to SM overuse spend more time for searching materials that enhance their education. As a result, their academic achievement was not negatively affected.

Nonlinear correlation analyses of Kendall and Spearman were also performed, and the results fit well with those obtained by using Pearson's approach. Therefore, no more explanation will be written here for the results obtained in these analyses.

Table (3) summarizes students' answers regarding the merits of SM usage as an enhancer for their educational attainment. Generally, all students agree that SM platforms steeply enhance their educational attainment. This can be observed from the high values of "Mean" for all questions.

**Table (3) Descriptive statistics of students' responses about the advantages of SM platforms for enhancing their academic attainments. 1.0 is minimum, 3 is the average, and 5.0 is the maximum. Sample size is 310 respondents.**

No.	Statement	Mean	S. error	S. D.	Var.
1	I am directing SM platforms in developing the educational process.	4.01	.062	1.096	1.2
2	SM provides opportunities to communicate with experts and specialists in engineering fields.	3.96	.055	.966	.934
3	SM provides opportunities for group discussion, solving assignments, and completing projects with colleagues.	3.98	.055	.97	.941
4	SM helps in obtaining appointments and announcements for lectures /department	4.38	.05	.88	.774

No.	Statement	Mean	S. error	S. D.	Var.
	/college/ university faster than other traditional means.				
5	SM facilitates the implementation and coordination of various academic activities.	3.99	.051	.89	.796
6	Read, audio, and video lectures related to my engineering specialty are available on SM.	4.09	.056	.98	.959
7	There are training courses related to my engineering major available on SM.	3.94	.057	.999	.999
8	Non-engineering training courses that are useful and supportive of my engineering specialty are available on SM.	3.86	.061	1.07	1.14

Students completely agree that SM platforms and their educational groups provide faster responses in terms of lecture announcements, timetables, appointments, and all other formalities. Also, students believe that SM platforms help solve assignments and projects, provide group discussions, and facilitate communication with experts and specialists in their disciplines. Not only that but students also accepted that SM platforms provide good opportunities for read, audio, and video lectures related to their courses. Finally, students declared that SM platforms helped them get training courses in engineering and non-engineering fields.

All in all, students agree without exception that SM platforms are essential for their educational attainments, improving their skills, training, and experience and they are happy with their use. The results obtained in Table (1) indicated that students addicted to SM networks have neither negative nor positive effects on their educational achievements. This study concludes that SM usage is essential for students' educational attainments, but its overuse is not welcomed.

Table (4) provides responses directed directly to the respondents to answer about themselves. In other words, their answers will be in the form of "if they do" or "never do", regarding the use of SM platforms for enhancing their academic achievements. The results are somewhat like the results specified in the questions in Table (1), with the exception that almost 50% of respondents indicated that they did not use SM platforms to attend scientific conferences, forums, and other activities. Similarly, about 50% of respondents did not use SM sites to communicate with experts and specialists in their specializations.

Undoubtedly, the respondents' answers reflected the substantial effects of war and siege imposed on Taiz city on their educational attainments. The worst situation in Taiz City forced many faculty members to leave their places and keep colleges with unqualified lecturers. This situation caused many students to look for alternative options to memorize and understand their studies. For that, students showed good interaction with SM platforms to promote their studies.

Due to the absence of official educational platforms at local universities, students resorted to SM platforms to offset this shortage. This explains the overuse of SM by students to compensate for deficiencies in their educational and professional lives. To conclude, SM platforms have become essential for undergraduate students' lives, education, and well-being.

**Table (4) Descriptive statistics of students' responses about the behavioral practices that students do through SM platforms for enhancing their academic attainments. 1.0 is the minimum, 3 is the average, and 5.0 is the maximum.**

**Sample size is 310 respondents.**

No.	Statement	Mean	S. error	S. D.	Var.
1	I always use SM for getting electronic scientific references as a suitable alternative to paper references that are not available in the Taiz libraries due to the war and siege.	4.03	.062	1.09	1.20
2	I often use SM platforms to gain knowledge and educational attainment due to the displacement of academic staff outside the city because of the war and siege.	4.13	.061	1.07	1.14
3	I use SM sites to participate in scientific conferences, forums, and activities.	3.06	0.07	1.30	1.70
4	I use SM platforms to track new information and announcements of lectures, department, college, and university.	4.31	.058	1.02	1.04
5	I use SM platform to obtain lectures (read - audio - video) related to my engineering specialty.	4.19	.059	1.03	1.07
6	I attend training courses related to my engineering major Through SM.	3.08	.073	1.28	1.63
7	I use SM to communicate experts and specialists to obtain knowledge and skills related to my engineering specialty.	3.12	.076	1.34	1.80
8	I always communicate with colleagues via SM platforms for group discussion, solving assignments, and completing projects.	3.88	.065	1.15	1.313

Table (5) explains the opinion of undergraduate engineering students towards the negative effects of excessive use of SM sites on their educational attainment; unlike the merits of SM use (Tables 3 & 2), students' opinions vary regarding the negative effects of excessive use of SM on their studies. Students were almost unanimous that one of the most critical drawbacks of using social networking sites is addiction to them ( $\mu= 3.95$ ). Furthermore, students provide positive signs that the frequent use of SM distracts their studies and enhances their irregular attendance at university ( $\mu= 3.57$ ). Besides, many students agree that the rapid development and rapid and easy access to SM sites reduce their positive thinking.

**Table (5) Descriptive statistics of students' responses about the disadvantages and Negative effects of excessive use of SM platforms on their academic attainments. 1.0 is minimum, 3 is the average, and 5.0 is the maximum. Sample size is 310 respondents.**

No.	Statement	Mean	S. error	S. D.	Var.
1	The use SM distracts students from studying and reviewing.	3.57	.062	1.09	1.19
2	SM wastes time and money in areas that do not benefit academic achievement.	3.07	.066	1.166	1.36
3	SM is addictive in its use.	3.95	.055	.966	.933
4	SM causes a decline in my academic level.	2.89	.070	1.22	1.49
5	SM increases students' absence from theoretical or practical lectures.	3.09	.071	1.25	1.55
6	SM use reduces positive thinking due to easy access to information and ready-made solutions to engineering problems.	3.52	.063	1.11	1.23
7	Excessive use of SM sites increases depression and anxiety in students.	3.13	.071	1.24	1.54
8	SM use distracts attention and hinders the ability to recognize academic information.	3.14	.068	1.195	1.43

In contrast, students disagree that SM causes a decline in academic scoring ( $\mu= 2.89$ ). Students shyly agree that SM overuse increases depression and anxiety for them and distracts their attention toward memorizing and understanding their classes. Finally, students indicated no correlation between excessive use of SM and class attendance and interaction. Additionally, students' opinions declare a negligible relationship between the overuse of SM platforms and time and money-wasting.

Table (6) depicts the descriptive statistics of students' behaviors with SM platforms and their influences on their academic attainments. Students provided obvious statements they seldom use their mobiles for SM entertainment or searching for knowledge during their theoretical and practical lectures ( $\mu= 1.9$ ). Additionally, Students completely disagree that their use of SM platforms causes them to miss theoretical and practical lectures or makes them stay up all night ( $\mu= 1.76$ ).

Students provided good statements that the worse situation in Taiz City because of the ongoing civil war and the lack of permanent or partial jobs do not push them to the excessive use of SM sites to entertain themselves ( $\mu= 2.55$ ). Furthermore, students disagree that they escape to SM overuse due to the educational pressures and density courses ( $\mu= 2.87$ ). These findings provide a good impression that engineering students are not much influenced by SM overuse. Bravely, many students agree that they spend a large time on SM platforms either for entertainment or for educational enhancements ( $\mu= 3.22$ ). Again, students declare that they often go to SM sites to search for ready-made answers to their doubts, making them not understand course materials or think of solutions themselves ( $\mu= 3.38$ ). Finally, students acquired that the time spent on SM platforms to communicate with family, spouse, and friends does not correlate with their educational achievements ( $\mu= 2.98$ ).

**Table (6) Descriptive statistics of students' responses about the behavioral practices toward the excessive use of SM platforms and their negative effects on their academic attainments. 1.0 is the minimum, 3 is the average, and 5.0 is the maximum. Sample size is 310 respondents.**

No.	Statement	Mean	S. error	S. D.	Var.
1	I often use SM sites in the classroom during theoretical and practical lectures.	1.90	.064	1.115	1.244
2	I spend large time on SM sites and waste my time.	3.22	.061	1.069	1.143
3	I use SM to search for ready-made solutions to engineering problems that faced me.	3.38	.063	1.105	1.221
4	I often resort to excessive use of SM, escaping from academic pressures.	2.87	.069	1.216	1.479
5	I use SM excessively under the pretext of the lack of partial job opportunities in Taiz city because of the war and the siege on it.	2.55	.079	1.387	1.925

No.	Statement	Mean	S. error	S. D.	Var.
6	I often use SM platforms to obtain contents (read/audio/visual) that are not related to my engineering specialty.	3.24	.065	1.147	1.315
7	I often communicate excessively on SM platforms with my family/relatives/friends because they are far away from me due to the war and the siege on the city.	2.98	.074	1.298	1.686
8	I often miss theoretical and practical lectures due to entertainment on SM sites and staying up all night with them.	1.76	.066	1.159	1.343

In a few words we can conclude that students underestimated the importance of the negative effects of using SM, believing that the benefits of its use are much larger than its negatives while acknowledging the existence of negative effects that require students to be anxious about them.

### Conclusions and Recommendations:

This study provided a comprehensive understanding of the nature of interaction between undergraduate engineering students and the excessive use of SM platforms. SM has become an essential requirement of students' lives, studies, and well-being. Due to the absence of official educational platforms, students use SM platforms to enhance their educational attainment, while its negative effects are minor. The findings of this study declare that female students are over-users of SM platforms and more addicted to them than their male counterparts. SM platforms help students to rapidly track changes in class timetables, communicate with colleagues, solve complicated problems, and follow announcements from their colleges. Also, it assists them in following the announcements for training courses that enhance their skills and knowledge.

With the worse situation of Taiz city because of the ongoing civil war and the siege on it, SM platforms provided good alternatives for students to interact with read, audio, and video lectures that make them understand their courses. Furthermore, SM platforms make students effectively communicate with experts, specialists, and for training purposes. Students stated that SM platforms made up for the shortage of faculty staff, and practical applications, and allowed them to communicate with experts in their specialization. The most precious outcome from this study is that there is no statistical correlation

between excessive use and addiction to SM sites with the GPAs of students, indicating that students use SM platforms often for their studies and not for wasting their time. The results showed that 81% of engineering students have personal laptops and 98% have smartphones, which indicates that students can communicate with Internet sites easily.

The following are recommendations drawn from this study:

1. It is encouraged to develop awareness programs for students on how to achieve a healthy balance between positive use of SM platforms and commitment to academic activities.
2. It is recommended to provide technical support and workshops to students, educators, and families on how to use SM platforms effectively in the context of academic learning.
3. It is recommended to encourage families to monitor their children's use of SM sites and guide them to optimal and effective use, through effective motivation and supervision.
4. It is recommended to integrate ethical aspects and social responsibility in dealing with SM platforms in the context of academic learning.
5. It is recommended to strengthen cooperation between universities and educational institutions to develop effective strategies to integrate SM platforms into learning processes and stimulate positive interaction between students and academic content.
6. It is recommended to develop innovative and engaging educational techniques that use the advantages of SM platforms to improve the learning experience and encourage students to participate effectively.
7. It is encouraged to conduct periodic surveys to evaluate students' experiences with SM platforms and to continually improve the educational process based on responses and suggestions.
8. It is recommended to form multidisciplinary research and development teams to ensure effective integration between the fields of education and information technology.
9. Further studies are encouraged to understand the relationship between the use of SM platforms and student achievement in other contexts and different circumstances.

## References

- Abdalnour, H.; Abdulkhalik, L.; Ghaleb, A.M.; Amrani, M.A.; Alduais, F. (2023) Challenges to Female Engineers' Employment in the Conservative and Unstable Society of Taiz State, Yemen: A Survey Study. *Sustainability*, 15, 14919. <https://doi.org/10.3390/su152014919>
- Aichner, T., Grünfelder, M., Maurer, O., Jegeni, D. (2021) Twenty-Five Years of Social Media: A Review of Social Media Applications and Definitions from 1994 to 2019, *Cyberpsychology, Behavior, and Social Networking*, 24(4) 215-222.
- AlOqlah, R. M. A. (2023) The Effect of Using Social Networks on Students Academic Performance in Saudi Universities, *Information Sciences Letters*, 12 (2) 795-805.
- Amrani, M. A., Al-Tayar, B., Saeed, M. A., Ghaleb, A. M., Hebah, H. A., Abdalnour, H., (2023) Barriers to the Effective Use of Technology in HEIs in Yemen: Case Study for Engineering Colleges, *Al-Baydha University Journal*, 5(4) 889-901.
- Ansari, J. A. N., NA Khan, N. A., (2020) Exploring the role of social media in collaborative learning the new domain of learning, *Smart Learning Environments*, 7, 9. <https://doi.org/10.1186/s40561-020-00118-7>
- Ausat, A. M. A. (2023). The Role of Social Media in Shaping Public Opinion and its Influence on Economic Decisions. *Technology and Society Perspectives (TACIT)*, 1(1), 35–44.
- Beemt, A. V. D., Thurlings, M., Willems, M., (2020) Towards an understanding of social media use in the classroom: a literature review, *Technology, Pedagogy and Education*, 29(1), 35-55.
- Chugh, R., Grose, R., Macht, S. A. (2021) Social media usage by higher education academics: A scoping review of the literature. *Educ Inf Technol* 26, 983–999.
- Chugh, R., Ruhi, U. (2018) Social media in higher education: A literature review of Facebook. *Educ Inf Technol* 23, 605–616.
- Manca, S. (2020). Snapping, pinning, liking, or texting: Investigating SM in higher education beyond Facebook. *The Internet and Higher Education*, 44, 100707.
- Manca, S., & Ranieri, M. (2016). Facebook and the others: Potentials and obstacles of SM for teaching in higher education. *Computers & Education*, 95, 216-230.



- Mishra, S. (2019). Social networks, social capital, social support, and academic success in higher education: A systematic review with a special focus on “underrepresented” students. *Educational Research Review*, 29, 100307.
- Moorthy, K., Ting, L. C., Wei, K. M., Zi Mei, P. T., Yee, C. Y., Wern, K. L. J., & Xin, Y. M. (2019). Is Facebook useful for learning? A study in private universities in Malaysia. *Computers & Education*, 130, 94-104.
- Dzvpatsva, G. P., Mitrovic, Z., Dietrich, A. D., (2014) Use of social media platforms for improving academic performance at Further Education and Training colleges : original research, *South African J. Information Management*, 16(1), 1-7.
- Habes, M., Alghizzawi, M., Khalaf, R., Salloum, S. A., & Abd. Ghani, M. (2018). The Relationship between SM and Academic Performance: Facebook Perspective. *International Journal of IT and Language Studies*, 2(1), 12-18.
- Hamadi, M., El-Den, J., Azam, S., Sriratanaviriyakul, N., (2022) Integrating social media as cooperative learning tool in higher education classrooms: An empirical study, *Journal of King Saud University - Computer and Information Sciences*, 34(6B) 3722-3731.
- Hou, Y., Xiong, D., Jiang, T., Song, L., & Yang, Q. (2019). SM Addiction: Its Impact, Mediation, and Intervention. *Journal of Psychosocial Research on Cyberspace*, 13(1), 1-4.
- Jogezai, N. A., Baloch, F. A., Jaffar, M., Shah, T., Khilji, G. K., & Bashir, S. (2021). Teachers’ attitudes towards social media (SM) use in online learning amid the COVID-19 pandemic: the effects of SM use by teachers and religious scholars during physical distancing. *Heliyon*, 7(4), e06781.
- Orben, A. (2020) Teenagers, screens, and social media: a narrative review of reviews and key studies. *Soc Psychiatry Psychiatr Epidemiol* 55, 407–414.
- Perez, E., Manca, S., Fernández-Pascual, R., Guckin, C. M. (2023) A systematic review of social media as a teaching and learning tool in higher education: A theoretical grounding perspective, *Education, and Information Technologies*, 28, 11921–11950.
- Purvis, A. J., Rodger, H. M., Beckingham, S., (2020) Experiences and perspectives of social media in learning and teaching in higher education, *Int. J. Educational Res.*, 1, 100018.

- Schreiner, M., Fischer, T. & Riedl, R. (2021) Impact of content characteristics and emotion on behavioral engagement in social media: literature review and research agenda. *Electron Commer Res* 21, 329–345.
- Sobaih, A. E. E., Hasanein, A. M., Abu Elnasr, A. E. (2020) Responses to COVID-19 in Higher Education: Social Media Usage for Sustaining Formal Academic Communication in Developing Countries, *Sustainability* 12(16), 6520.
- Taylor, S. H., Bazarova, N. N. (2021) Always Available, Always Attached: A Relational Perspective on the Effects of Mobile Phones and Social Media on Subjective Well-Being, *J. Computer-Mediated Communication*, 26(1), 187–206.
- Tsoy, D., Tirasawasdichai, T. (2021) Role of Social Media in Shaping Public Risk Perception during COVID-19 Pandemic: A Theoretical Review, *Int. J. Management Science and Business Administration*, 7(2) 35-41.