



# The Impact of Social Media on Academic Performance, Health and Social Interaction of Students in University of Technology and Applied Sciences, Nizwa, Sultanate of Oman

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## **Authors' contributions**

*This work was carried out in collaboration among all authors. Author ZMNAR gathered the literature review, identified the gaps and conceptual model. Authors ZMNAR and NSAAD designed the instrument for the study. Statistical analysis is done by all the authors. All authors read and approved the final manuscript.*

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## **ABSTRACT**

The research aimed to contribute to investigate the impact of social networking media on academic performance, health and social interactions in Oman. It is a causal study as it studied the impact of social media usage on academics, social interactions and health. The study area was University of

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Technology and Applied sciences, Nizwa. The period of study was from February 2023 to May 2023. The total population of students studying in University of Technology and Applied Sciences, Nizwa is 5692. A sample of 242 students were selected for the study from four departments. Samples were designed from students in each department by using proportionate stratified sampling. Primary data was collected online using Google form, with the help of a structured questionnaire in English and Arabic. The findings of the study revealed that the correlation between social media usage and health issues is 0.174. There is a significant relationship between social media usage and its impact on health. Social media usage contributes only 3% to health issues on the students. The correlation between social media usage and social interactions and behaviour is 0.264. 7% of the variation in social behaviour can be predicted due to usage of social media. It is proved that there is a significant relationship between social media usage and its impact on social interactions and behavior of students. The correlation between social media usage and academic performance is 0.271. Social media usage contributes only 7% to academic performance of the students. It is proved that there is a significant relationship between social media usage and its impact on academic performance of students, their health and behaviour. There is no significant relationship between gender, department, level of study and grade with the usage of social media.

*Keywords: Social media usage; health issues; social interactions and behavior; academics.*

## 1. INTRODUCTION

“Most Omanis spend up to six hours daily on social media. WhatsApp is the most common social media app used in Oman, according to a report by the National Centre of Statistics and Information” [1]. “94 per cent of Omanis own or use social media accounts. WhatsApp is used by 93 per cent of social media users which is followed by YouTube with 71 per cent social media users and Instagram with 50 per cent. The average daily use of social media was six hours per day and that the most frequent use of social media happens between 8:00 pm and 12:00 am. 36 per cent of Omanis trust social media as a source of news and information about important events. Omani citizen has up to three accounts on different social networking sites. Women prefer using apps like Snapchat, Instagram and YouTube. Men prefer using apps such as Facebook, Twitter and Imo. Close to 91 per cent surveyed individuals said contact with family and friends was the top reason they used social media, which was followed by 47 per cent claiming they used it for keeping themselves updated with news and current events” [1]. The most popular application for publishing text, images and videos is "WhatsApp", where 19 per cent of Omanis publish seven or more times a day, followed by Snapchat and Instagram. “More than half of Omanis believe that the use of social media has a positive effect on their social and practical lives. A third of Omanis used social networking sites or applications to buy or search for some goods and services, and one in five Omani used social media for commercial purposes, such as promoting or selling a

particular good or service. The use of social media for commercial purposes is significantly higher among females than males. The most popular applications for purchasing and searching for goods and services were Instagram, followed by WhatsApp. Eight per cent of Omanis are highly confident in the quality and price of products purchased through social media. Four out of 5 Omanis view that the use of children under the age of 13 for social media has a negative impact on their social and academic lives. While 6 per cent believe there is a positive effect in one form or another. 12 per cent, however, believe that the impact of social media depends on what and how they are used” [2].

### 1.1 Statement of the Problem

A research conducted by Manal al Hadhrami and Munal al Maawali indicates nearly 70 per cent of Omani youth between the age of 15 and 25 years are on social media up to 15 hours a day. A lot of youth in Oman find it hard to live without the social media. Many students fail to concentrate on their studies. They spend up to 15 hours a day on social media [3]. It leaves them with only nine hours of sleep, meals, studies, family gatherings and friends. Young Omanis are very addicted to it and that is very unhealthy. Omani parents are also concerned about social media pollution on the minds of their children saying the online trend is taking most of their time. Muhammed al Junaibi, an employee of the Ministry of Civil Service stated to Oman Observer that his 15-year-old daughter locks herself in her bedroom with her mobile phone for

hours. She is also online until 2 in the morning. It is frightening to think what she is reading or whom she is communicating with [4]. Khalfan al Suleimani, an Information Technology business entrepreneur said that his three teenage children are hooked to social media. They spend hours staring at the small screens of their phones. They don't talk to each other or to their parents. They don't even want to go out with their families. They even take their meals in their rooms. They socialise very little and this undesirable habit will have a negative impact on their future [5]. WhatsApp is the most popular social media app used in Oman, according to data shared by the Ministry of Transport, Communications and Information Technology. "People over the age of 18 are using WhatsApp in Oman with 92% of them using WhatsApp in 2020. This is a 3% increase compared to 2019," YouTube is the second most popular with 81% of people using the platform in 2020. "This is an 11% rise compared to 2019," 56% of people are using Facebook, making it the third most popular social media platform in the Sultanate. The percentage of IMO usage in the Sultanate touched 47% and 44% for Instagram. As for the Twitter application, the percentage of usage in the Sultanate in 2020 has reached 25%. 24 percent was the rate of use of the Snapchat application for the year 2020 by individuals aged 18 years and over, and 10 percent was the rate of use of the LinkedIn application [6]. In a report that came out in Oman Observer, Abdullah al Bahrani stated not to use social media until you are ready for it and he added that it is important to be open-minded while interacting on these platforms. Social media is an ideal platform to share ideas and information and entertainment, but at the same time he emphatically said no to social media in classrooms or for study purposes. It is also emerging as a powerful tool for direct marketing of products and messages as on an average most people switch on to their phones 250 times a day [7]. Ahmed al Shukaili, a physiotherapist at the Ministry of Health, revealed that most youngsters of today are facing neck-related problems. According to global health experts, iPad users have been subject to strain injuries, such as aches and pains in the hand they hold the device with and in their fingers after typing on and swiping the screen, in addition to arm and neck problems associated with holding their iPad on their knees [8]. Mutasim Sultan said to be ignorant of any topic these days is inexcusable, because knowledge is easily available in the cyber world, but also felt that today's generation wants shortcuts to gain knowledge. Social media

is designed to be addictive. Social media cannot really replace the traditional learning [9]. Thus this study was focused on the usage of social media sites by the students in University of Technology and Applied Sciences, Nizwa and identifying the impact of social media on their academic performance, health and social interactions.

## 1.2 Significance of the Study

"The burst in the use of social networking sites such as WhatsApp, YouTube, Twitter, Instagram, Snapchat and Pinterest has brought many opportunities, changes and challenges into our world. The impact of this type of media can be social, psychological, and/or economic. For many societies, the social impact is a major concern since these technologies with their rapid spread have succeeded in influencing the attitudes of various groups of individuals. The role that social media played in the recent unrests in the Arab world is an example of such an impact. Oman, like all other countries, is also facing the same challenge. Among all other age groups in Oman, teenagers from 13 to 19 years old make up a major segment in the demographic structure of the country" [10]. Therefore, it is very important to study and understand the impact of the rapidly-growing social networking media on this group. The present research aims to contribute to this understanding by investigating the impact of social networking media on academic performance, health and social interactions in Oman. Previous studies are limited in Oman. Thus this study is highly relevant and significant.

## 1.3 Objectives of the Study

1. To determine the effect of social media usage on health issues of the students.
2. To analyse the impact of social media on the social interaction or behavior.
3. To measure the impact of social media usage on academic performance of the students.
4. To identify the relationship between social media usage with gender, grade, department and level of study.

## 1.4 Hypotheses

- H1: There is no significant relationship between gender and academic performance due to social media usage  
H2: There is no significant relation between gender and health issues

H3: There is no significant association between gender and social behaviour or interactions

H4: There is no significant relationship between academic level of study and academic performance due to social media usage

H5: There is no significant relation between level of study and health issues

H6: There is no significant association between level of study and social behaviour or interactions

H7: There is no significant relationship between social media usage and academic performance.

H8: There is no significant relation between social media usage and physical and mental health.

H9: There is no significant association between social media usage social behaviour or interactions.

## 2. LITERATURE REVIEW

“Abdul assessed the impact of the social media usage by the university students as they adopt the different applications during their study career. 215 students ensured their response as they use the social networking applications including Facebook, YouTube, Twitter, and WhatsApp. Social media influence their contribution in the development of learning, efficiency violation, bad socialization, addictiveness, impact psychologically, vitiate time management, ethical and health related issues. While most students use social media and spend several hours checking social media sites; there was a negative aspect to university students’ use of social media” [11]. “Khuram & Syeeda investigated the use of social media applications among 214 students pursuing higher education in Oman. Instagram is the most frequently used social media application among the students followed by the WhatsApp and YouTube. The key reasons to use social media are entertainment and social networking. 84% of the students use social media for three hours or more every day. 72% of students use social media for longer time than intended whereas 62%, find it difficult to limit their time on social media. Around 60% feel the time spent on social media is negatively affecting their progress in studies and they often face complains from their family on social media usage. The level of addiction to use various social media applications is on the rise among the students” [12]. “Zahid assessed the effect of social networking sites on 300 students’ academic performance and student’s behavior in Rawalpindi and Islamabad (Pakistan). There is a positive and significant relationship between the

social networking sites and students’ academic performance and their behavior. Facebook and Twitter are mostly used by the students” [13]. “Bajpai & Maneesha analyzed the extent to which the use of social media affects the academic performance of engineering students of a University in Dubai. It is not advisable to restrict the use of social media for the students. The students need to be counseled for using the social media for academic purposes and not get influenced towards just socializing” [14]. “Rahman & Mithun conducted at the Bangladesh Agricultural University, found that Facebook was the most used social media by the respondents, followed by YouTube. The majority of the students use social media for communication purposes and 46% of respondents were found to use these sites for 41-55 hours per week. Students use social media to gather academic information. Social media sites are saving their time as well as effort. There is a negative relation between academic performance and time spent on social media” [15]. Palla & Sheikh investigated “the impact of social media usage on the academic performance of college students in Kashmir. Students use social media networking sites to fulfill their educational needs. YouTube is the most largely used social media network among undergraduate students. Students feel that social media networks are easy to use and they have been using these sites for the past three years. The use of social media greatly helps the students to share knowledge and information with others, to improve their academic grades and to improve their reading and writing skills. A majority of the students spend an hour in using social media networks. Teachers must encourage their students to make the best use of social media networking sites for recreational and academic purposes” [16]. Hamal identified “the relationship of social media use on academic performance of 176 management students of different universities in Kathmandu. Engagement in social media has a negative relationship on academic performance of students. Most students feel that its use should not be stopped. Students need to be informed about pros and cons of social media, and the universities should engage students in teaching learning activities through social media” [17]. Harrath & Alobaidy studied “the impact of Social Networking Sites on student academic performance among 628 students of University of Bahrain. They found that the Social networking sites have positive and negative impacts on student academic performance” [18]. Nawaz identified “how internet usage affects students’

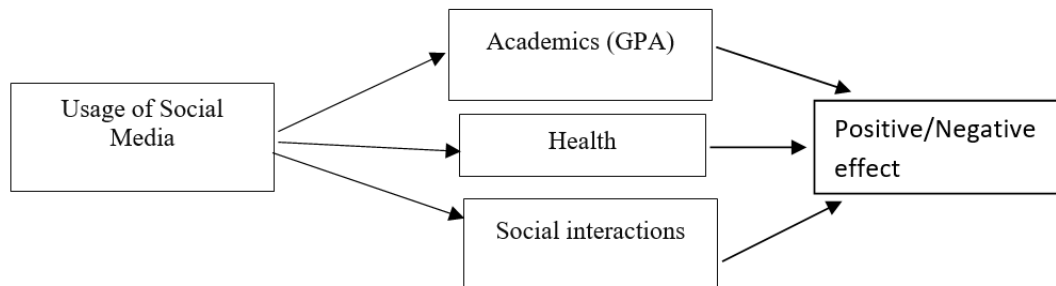
academic performance to increase their grades. They determined the type of internet use and the impact of the internet on students' academic achievement in the University of Punjab, Pakistan. Internet use has a positive impact on student's academic achievement" [19]. Mapa & Lakshika studied "the relationship between the participation in social media and academic performance in undergraduate students of the Rajarata University of Sri Lanka. Social media significantly impacts students' academic performance of undergraduates. Most students use social media for entertainment, chat, follow friends' posts, fashion and styles and waste their spare time. Social media has a significant adverse effect on the academic performance of undergraduates" [20]. Diluxshy identified "the impact of social networks on students' performance from different schools in Trincomalee. Facebook destroys the future and academic carrier of school students. The study found an understanding of how students use online social networking sites, the time they spend and the type of information required and their overall performance. The influence of social media over the academic engagement and performance of students requires deeper

understanding" [21]. Joseph focused "on the influence of Facebook on the academic performance of undergraduate social sciences students using three federal Universities in Nigeria. Facebook usage did not significantly influence the academic performance of students and that its use can be harnessed for augmenting student academic performance and for advancing education in general" [22].

## 2.1 Research Gaps

Most of the previous studies focused mainly on the impact of social media on academic performance alone. Few studies focused on the impact of social media on health issues of users. Most of the literature reviews aimed to study the impact on their academic performance. But these studies also mentioned that social media affects the health and the behaviour of users. Moreover, studies related to these three issues are limited in Sultanate of Oman. This research addresses these gaps by studying the impact of social media on academics, health and social interactions of Omani students in a University.

## 2.2 Conceptual Framework



## 3. RESEARCH METHODOLOGY

It is a causal study as it studied the impact of social media usage on academics, social interactions and health. The study area was University of Technology and Applied sciences, Nizwa. The period of study was from February 2023 to May 2023. The total population of students studying in UTAS, Nizwa was 5692 (Source: Registration Department, UTAS, Nizwa, March 2023). There are four major departments in UTAS, Nizwa, English Language Center, Business Studies, Engineering and Information Technology Department. This is taken as the sampling frame. The sample size was determined as 361 (Krejcie and Morgan, 1970). These samples were collected from students in each department by using proportionate stratified sampling. The sampling method adopted for the collection of samples was simple random sampling method, where in the students were contacted on a random basis. Primary data was collected online using Google form, with the help of a structured questionnaire in English and Arabic. Pilot study was done among 25 respondents to identify the validity of the questions. Thus well-structured questionnaire was administered for collection of data. The tools used for analysis includes correlation, regression, independent t test and univariate test.

### 3.1 Analysis of the Study

The data was collected from 242 respondents with a response rate of 67%. The analysis of the study was done with the responses from 242 University students.

#### 3.1.1 Impact of social media usage on health of students

The model Summary Table 1 provides the R, R<sup>2</sup>, adjusted R<sup>2</sup> which can be used to determine how well a regression model fits the data. The R value represents the simple correlation between social media usage and health issues and is 0.174 which indicates a weak positive degree of correlation. The R<sup>2</sup> value (also called the coefficient of determination), is the proportion of variance in the dependent variable that can be explained by the independent variable. The R<sup>2</sup> indicates how much the total variation in the dependent variable (health), can be explained by the independent variable, social media usage. 3% of the variation in health issues can be predicted due to usage of social media. Thus, social media usage contributes only 3% to health issues on the students. Remaining 97% contributes to other factors that influence the

health. The adjusted R<sup>2</sup> (0.260) gives an idea how well the model generalizes that the value is close to R<sup>2</sup> (0.30). There is a difference of 0.004.

The ANOVA test was performed to identify the statistical significance of the regression model on whether it is a good descriptor for the relationship between the independent (social media usage) and the dependent variable (health issues). The independent variable significantly predicts the dependent variable,  $F(1, 241) = 7.510, p < .05$ . The p-value associated with F value (0.007) is very small when compared to alpha level (0.05). Hence it is concluded that the independent variable reliably predict the dependent variable. This means that the independent variable (social media usage) is significant in explaining the variation in the dependent variable (health issues). The ANOVA Table 2 proves that the correlation 0.174 is significant. Hence the model is proved to be fit.

The coefficients in Table 3 helped to find out the contribution of social media usage on health. To make the comparison, the Beta standardized coefficients were used. The results indicate that social media usage ( $\beta = 0.140; p = 0.007$ ) is a significant predictor of health issue.

**Table 1. Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.174 <sup>a</sup>	.030	.026	.737782849378 449	2.072

a. Predictors: (Constant), Social media usage  
b. Dependent Variable: Health issues

**Table 2. ANOVA<sup>a</sup>**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	4.088	1	4.088	7.510	.007 <sup>b</sup>
	Residual	130.638	240	.544		
	Total	134.725	241			

a. Dependent Variable: Health issues  
b. Predictors: (Constant), Social media usage

**Table 3. Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.107	.164		12.821	.000
	Social media usage	.140	.051	.174	2.740	.007

a. Dependent Variable: Health issues

Therefore, the Regression equation is developed as follows:

$$Y = a + b X$$

Where 'Y' is the dependent variable health issues, a and b are constants.

The model equation based on the analysis is given below:

$$Y (\text{Health issue}) = 2.107 + 0.140 \text{ Social media usage } (X), \text{ where } X \text{ is social media usage}$$

$$\text{Health issue} = 2.107 + 0.140 (\text{Social media usage})$$

This estimate explains that that for every one unit change in social media usage, there is a 0.140 unit change in the health issue of students.

### 3.1.2 Impact of social media on social interactions and behaviour of students

The R value represents the simple correlation between social media usage and social interactions and behaviour and is 0.264 which indicates a weak positive degree of correlation. The R<sup>2</sup> indicates how much the total variation in

the dependent variable (social behaviour), can be explained by the independent variable, social media usage. 7% of the variation in social behaviour can be predicted due to usage of social media. Thus, social media usage contributes only 7% to social interactions and behaviour of the students. Remaining 93% is contributed to other factors that influence the social behaviour. The adjusted R<sup>2</sup> (0.066) gives an idea how well the model generalizes that the value is close to R<sup>2</sup> (0.070). There is a difference of 0.004.

The regression model is a good descriptor for the relationship between the independent (social media usage) and the dependent variable (social behaviour). The independent variable significantly predicts the dependent variable,  $F(1, 241) = 18.041, p < .05$ . The p-value associated with F value (0.000) is less than the alpha level (0.05). Hence it is concluded that the independent variable reliably predict the dependent variable. This means that the independent variable (social media usage) is significant in explaining the variation in the dependent variable (social behaviour of students). The ANOVA Table 5 proves that the correlation 0.264 is significant. Hence the model is proved to be fit.

**Table 4. Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.264 <sup>a</sup>	.070	.066	.751865	1.848

a. Predictors: (Constant), Social media usage  
b. Dependent Variable: Social interactions

**Table 5. ANOVA<sup>a</sup>**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	10.199	1	10.199	18.041	.000 <sup>b</sup>
	Residual	135.672	240	.565		
	Total	145.871	241			

a. Dependent Variable: Social interactions  
b. Predictors: (Constant), Social media usage

**Table 6. Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.940	.167		11.581	.000
	Social media usage	.220	.052	.264	4.247	.000

a. Dependent Variable: Social interactions

The coefficients in Table 6 helped to find out the contribution of social media usage on social interaction of students. The results indicate that social media usage ( $\beta = 0.220$ ;  $p = 0.000$ ) is a significant predictor of social interactions and behaviour.

The model equation is:

$$Y (\text{Social interactions and behaviour}) = 1.940 + 0.220 \text{ Social media usage } (X), \text{ where } X \text{ is social media usage}$$

$$\text{Social behaviour} = 1.940 + 0.220 (\text{Social media usage})$$

This estimate explains that that for every one unit change in social media usage, the social behavior and interactions of the students will change by 0.220 units.

### 3.1.3 Impact of social media usage on the academic performance of students

The R value represents the simple correlation between social media usage and academic performance and is 0.271 which indicates a weak positive degree of correlation. The  $R^2$  indicates how much the total variation in the dependent variable (academic performance), can be

explained by the independent variable, social media usage. 7% of the variation in academic performance can be predicted due to usage of social media. Thus, social media usage contributes only 7% to academic performance of the students. Remaining 93% is contributed to other factors that influence the academic performance. The adjusted  $R^2$  (0.070) gives an idea how well the model generalizes that the value is close to  $R^2$  (0.073). There is a difference of 0.003.

From the ANOVA Table 8 it is clear that the regression model is a good descriptor for the relationship between the independent (social media usage) and the dependent variable (academic performance). The independent variable significantly predicts the dependent variable,  $F(1, 241) = 19.005$ ,  $p < .05$ . The p-value associated with F value (0.000) is less than the alpha level (0.05). Hence it is concluded that the independent variable reliably predicts the dependent variable. This means that the independent variable (social media usage) is significant in explaining the variation in the dependent variable (academic performance of students). The ANOVA Table 8, proves that the correlation 0.271 is significant. Hence the model is proved to be fit.

**Table 7. Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.271 <sup>a</sup>	.073	.070	.594756784321866	2.189

a. Predictors: (Constant), Social media usage  
b. Dependent Variable: Academics

**Table 8. ANOVA<sup>a</sup>**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	6.723	1	6.723	19.005	.000 <sup>b</sup>
	Residual	84.897	240	.354		
	Total	91.619	241			

a. Dependent Variable: Academics  
b. Predictors: (Constant), Social media usage

**Table 9. Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.434	.132		18.370	.000
	Social media usage	.179	.041	.271	4.359	.000

a. Dependent Variable: Academics



**Table 10. Group statistics**

	<b>Gender</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Std. Error Mean</b>
Social media usage	Males	104	3.1202	.89902	.08816
	Females	138	3.0688	.96128	.08183

**Table 11. Independent samples test**

		<b>Levene's Test for Equality of Variances</b>		<b>t-test for Equality of Means</b>						
		<b>F</b>	<b>Sig.</b>	<b>T</b>	<b>Df</b>	<b>Sig. (2-tailed)</b>	<b>Mean Difference</b>	<b>Std. Error Difference</b>	<b>95% Confidence Interval of the Difference</b>	
								<b>Lower</b>	<b>Upper</b>	
Social media usage	Equal variances assumed	.122	.727	.423	240	.673	.05135	.12142	-.18784	.29054
	Equal variances not assumed			.427	229.093	.670	.05135	.12028	-.18565	.28835

The coefficients in Table 9 helped to find out the contribution of social media usage on academic performance of students. The results indicate that social media usage ( $\beta = 0.179$ ;  $p = 0.000$ ) is a significant predictor of academic performance.

Therefore, the model equation is:

$$Y \text{ (Academic performance)} = 2.434 + 0.179 \text{ (Social media usage)} (X), \text{ where } X \text{ is social media usage}$$

$$\text{Academic performance} = 2.434 + 0.179 \text{ (Social media usage)}$$

This explains that for every one unit change in social media usage, the academic performance of the students will change by 0.179 units.

### 3.1.4 Independent t test between social media usage and gender

The mean social media usage for males is 3.12 and the mean social media usage for females is 3.06.

F is the test statistic for Levene's test. Sig. is the p-value corresponding to this test statistic. The Levene's test for significance is 0.727 which is greater than 0.05 ( $p \text{ value} > 0.05$ ). So the null hypothesis is accepted and it is concluded that the variance in social media usage of males is

not significantly different than that of females. There is no significant difference between gender and social media usage. The mean difference is calculated by the difference of mean of males and the mean of females. If the lower boundary is a negative number and the upper boundary is a positive number, the results are not significant for the chosen significance level. Since  $p > 0.721$  is greater than the significance level  $\alpha = 0.05$ , we accept the null hypothesis, and conclude that the mean social media usage for males and females is insignificantly.

Thus it is concluded that there is no significant difference in mean social media usage between males and females ( $t_{229.093} = 0.427, p > 0.721$ ). The average social media usage for males and females are not different.

### 3.1.5 Univariate test of social media usage with grade, department and level of study

The mean social media usage is high (3.180) for students having a grade between 2 - 2.25. The average social media usage is less for those students who are having higher grades.

The average social media usage is higher (3.229) for students from English language center. The average social media usage of Business department is comparatively the least (3.014).

**Table 12. Grade**

Grade	Dependent Variable: Social media usage			
	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
<2	3.088 <sup>a</sup>	.217	2.660	3.516
2 - 2.25	3.180 <sup>a</sup>	.215	2.756	3.604
2.26 - 2.49	3.176 <sup>a</sup>	.200	2.782	3.570
2.5 - 2.74	3.176 <sup>a</sup>	.197	2.786	3.565
2.75 - 3	2.909 <sup>a</sup>	.174	2.566	3.252
>3	2.987 <sup>a</sup>	.141	2.709	3.265

a. Based on modified population marginal mean.

**Table 13. Department**

Department	Dependent Variable: Social media usage			
	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Business Studies	3.014 <sup>a</sup>	.128	2.761	3.268
Engineering	3.026 <sup>a</sup>	.149	2.731	3.320
English Language Center	3.229 <sup>a</sup>	.189	2.857	3.602
Information Technology	3.117 <sup>a</sup>	.158	2.804	3.429

a. Based on modified population marginal mean.

**Table 14. Level of study**

Dependent Variable: Social media usage				
Level	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Advanced Diploma	2.737 <sup>a</sup>	.229	2.285	3.190
BTech	3.270 <sup>a</sup>	.236	2.804	3.736
Diploma First year	2.973 <sup>a</sup>	.137	2.702	3.243
Diploma Second year	3.229 <sup>a</sup>	.164	2.905	3.553
Foundation	3.154 <sup>a</sup>	.152	2.853	3.454

a. Based on modified population marginal mean.

**Table 15. Tests of between-subjects effects**

Dependent Variable: Social media usage						
Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	66.797 <sup>a</sup>	73	.915	1.073	.350	.318
Intercept	787.526	1	787.526	923.894	.000	.846
Grade	1.790	5	.358	.420	.834	.012
Department	1.425	3	.475	.557	.644	.010
Level	5.734	4	1.434	1.682	.156	.039
Grade * Department	15.104	15	1.007	1.181	.291	.095
Grade * Level	10.128	15	.675	.792	.685	.066
Department * Level	12.784	10	1.278	1.500	.143	.082
Grade * Department * Level	25.778	20	1.289	1.512	.083	.153
Error	143.203	168	.852			
Total	2522.000	242				
Corrected Total	210.000	241				

a. R Squared = .318 (Adjusted R Squared = .022)

The average social media usage is highest for BTech students (3.270) followed by Diploma second year (3.229) students. The average social media usage is lowest for Advanced diploma (2.737) students.

The relationship between grade, department and level of study is related with social media usage. Since the significance value is >0.05, it is proved that the null hypothesis is accepted and there is no significance between grade, department, level of study with social media usage of students.

#### 4. CONCLUSION

It is concluded that there is a positive relationship between the social media and the academic performance, health and social interaction among the students of the University of Technology and Applied Sciences in Nizwa, Oman and they need to control and manage their usage of social media sites. In order to better understand and find more elements to measure

the factors that affect a student's academic performance, health, and social interaction through collaborative learning in higher education institutions, the researchers propose more studies and the addition of factors that have an impact on a larger sample size for future work. Finally, students themselves must be aware of the risks associated with excessive use of social media and behave properly on these platforms. Students should use social media less frequently in order to avoid developing an addiction to these platforms. Students need to be cautious while using these sites and aware of its risks. Despite the advantages that students can derive from social media networks, such as information sharing, relationship building, participating in group discussions from near and far, among others, there is to some extent addiction and distraction of attention caused by the use of social media, which could have serious consequences. It is more useful for the modern society but the hidden risks and challenges are high. Students should strike a balance in using the latest technological inventions in social media

without affecting their health, social behaviour and academic growth.

## 5. FINDINGS OF THE STUDY

1. The correlation between social media usage and health issues and is 0.174. There is a significant relationship between social media usage and its impact on health. Social media usage contributes only 3% to health issues on the students. It is found out that that for every one unit change in social media usage, there is a 0.140 unit change in the health issue of students.
2. The correlation between social media usage and social interactions and behaviour and is 0.264. 7% of the variation in social behaviour can be predicted due to usage of social media. It is proved that there is a significant relationship between social media usage and its impact on social interactions and behavior of students. It is found that that that for every one unit change in social media usage, the social behavior and interactions of the students will change by 0.220 units.
3. The correlation between social media usage and academic performance and is 0.271. Social media usage contributes only 7% to academic performance of the students. It is proved that there is a significant relationship between social media usage and its impact on academic performance of students. It is found that that for every one unit change in social media usage, the academic performance of the students will change by 0.179 units.
4. It is proved through statistical test that gender, department, level of study and grades have no significant relationship with social media usage. Thus the null hypothesis proposed is accepted.

## 6. RECOMMENDATIONS

1. Develop social media guidelines to promote responsible social media use and reduce the negative impact on academic performance.
2. Encourage offline social interaction to promote healthy social interaction and face-to-face communication skills.
3. Conduct social media awareness campaigns to educate students on the potential negative impact of social media and provide tips for responsible use.

4. Conduct research on the impact of specific social media platforms to gain more in-depth insights into the ways social media affects students.
5. Collaborate with other universities to compare the impact of social media on students in different contexts.
6. Monitor social media use to identify patterns and inform the development of social media guidelines and awareness campaigns.
7. Encourage self-reflection and help students develop self-awareness to make informed decisions about their social media use.
8. Foster a culture of by promoting a healthy balance between online and offline activities to reduce the negative impact of social media on academic performance, health, and social interaction.

## CONSENT

All authors declare that 'written informed consent was obtained from the approved parties for publication of this case report and accompanying images.

## ETHICAL APPROVAL

All authors hereby declare that all experiments have been examined and approved by the appropriate ethics committee and have therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki.

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## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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