🦲 Cite Us 🚫

Vol. VIII, No. I (Winter 2023)

Pages: 297 – 308

DOI: 10.31703/gesr.2023(VIII-I).26

Citation: Channa, S., Karim, N. A., & Fiza, K. (2023). Impact of Smartphone Usage on the Academic Performance of Students at Public Sector University in Karachi. *Global Educational Studies Review*, *VIII*(I), 297-308. <u>https://doi.org/10.31703/gesr.2023(VIII-</u>I).26



Impact of Smartphone Usage on the Academic Performance of Students at Public Sector University in Karachi

Salma Channa

Naseem Abdul Karim *

Kaneez Fiza *

Corresponding Author: Salma Channa (M.Phil. Scholar, Department of Education, Benazir Bhutto Shaheed University, Lyari, Karachi, Sindh, Pakistan. Email: <u>Salmachanna22@gmail.com</u>)

Abstract: This research study was conducted to examine the impact of Smartphone usage on the academic achievement of students at a public-sector university in Karachi. The strategy of the research was quantitative and the population of the study was limited to a public university in Karachi. The simple random sampling technique was applied to collect the data and the sample size of the study was 100 respondents. Moreover, the data was analyzed through inferential statistics tool simple linear regression by employing statistical packages of social sciences 20 (SPSS). The findings of the study indicate that the usage of Smartphones influences positively the Academic Performance of students. Students easily and inexpensively access the content and related material. However, the findings also depict that the appropriate use of Smartphones is key to avoiding the overuse that poses numerous problems such as distraction, etc.

Key Words: Smartphone, Students' Academic Performance, Public University

Introduction

The Smartphone is a new type of programming mobile phone created by recent advancements in mobile technologies.(Barnes, Perssey & Scornavacca, 2019) claimed that smartphones are the pinnacle of contemporary mobile phone development, combining phones with the ability to do extra PDA operations. In this fusion of the phone and handheld computer, the phone has the genetic advantage because smartphones resemble phones more than PDAs. The Smartphone being developed for mobile phones has an impact on how people typically think about this and is reflected in the design of the device. The most significant security index for smartphones included communications equipment with additional computational power built in.

The Smartphone combines the functions of a computer and a phone. Reverse the typical

^{*} M.Phil. Scholar, Department of Education, Benazir Bhutto Shaheed University, Lyari, Karachi, Sindh, Pakistan.

[†] M.Phil. Scholar, Department of Education, Benazir Bhutto Shaheed University, Lyari, Karachi, Sindh, Pakistan.

^{*} Lecturer, Department of English, Shaheed Mohtarma Benazir Bhutto Medical University Larkana, Sindh, Pakistan.

mobile device, a smartphone contains much local storage space and memory. The smartphone is intended to be a computer-like Smartphones device. are portable entertainment systems that allow users to watch videos, listen to music, refresh blogs, and engage in audio and video blogging. I phone, HTC, Samsung, and other devices fall under the umbrella of "Smartphones," and maybe most crucially, one can access Web 2.0 with a Smartphone just like they would on any other network that connects to the internet. (Ellison et al., 2007).

In the general consumer market, smartphones have been available since 1993, but they have only recently gained popularity in the previous six years thanks to Apple. Three important phases of the Smartphone era can be distinguished. The first stage consisted solely of means for businesses. The initial cell phones were all the ones that were aimed at this point and had features that complied with modern business demands. 1993: Simon from IBM. This era's groundbreaking device, the Blackberry, made numerous characteristics such as email, online fax, web surfing, internet, and camera. This stage was finished based on Smartphone targeting firms. The iPhone, the marketchanging Smartphone in 2019, marked the start of the second phase of the Smartphone era. The first smartphones were unveiled by Apple in 2007. This was the first time that the industry had considered the general consumer market for smartphones. Google released the Android OS at the end of 2007 with the goal of entering the consumer smartphone market. (Brown, 2020). The goal during this time was to introduce the functionality that the average consumer needed while maintaining a low price to draw in a growing number of users. Along with the standard phone features, this phone included features like email, social media integration, internet access to audio and video, and chat. The main goal of the third stage of smartphones was to close the gap between the Foundation and Central Smartphone. It also aimed to increase offer quality, advance display technology on top of that for the benefit of a reliable mobile operating system (OS), add the most potent batteries, enhance the user interface, and add numerous other features to these smart devices. With improvements to Apple iOS, Android, and Blackberry OS in 2008, this claim makes sense.

The Objective of the Study

To find out the relationship between the usage of Smartphones and the academic performance of students

The Hypothesis of the Study

There is no relationship between the usage of Smartphones and the academic performance of students.

Paper Purpose

The goal of this study is to explore theories regarding how using a smartphone affects students' academic performance in order to highlight some advantages and draw attention to some potential drawbacks. Researchers discovered that student academic performance is greatly impacted favourably by Smartphone usage. Students can use their smartphones to make presentations, take videos, record voiceovers, build flashcards, and more.

Literature Review

The Smartphone is a device able to handle more information than other phones and has the feature of both a computer and a mobile device (cell phone). (Boyd, Danah, Ellison, and Nicole, 2007). Defined that a Smartphone is a device that can lead to dual functions. I.e. Mobile and dealing with the computer. While the Smartphone is growing all over economic sectors the universities students have seen as one of the major consumersKaplan and Haenlein (2020), (Chiu, 2019); stated that while the global Smartphone market is growing rapidly, little is known about how a consumer makes use of Smartphone.(Lee, Cho, Kim, & Noh, 2022). assumed that in the process of convergence, smartphones are the leading hardware taking interface the front and playing the role of the global mobile terminal. As for marketing strategy Smartphones are in the long

and provide in the market, referring to a new class of cell phones with full-service of communication, mobile computing sectors including voice communication, messages personal information management application, and wireless communication ability. Similarly, Techterms examined that the true meaning of a Smartphone is a mobile phone with advanced features functionally beyond traditional functions such as phone calls, and sending text messages. Smartphones are equipped with the capacity to view photos, games, navigation, built-in cameras, send and receive e-mail, builtin applications for social websites, wireless internet, and much more. Because of the same reasons Smartphone's now become the common choice for consumers in conjunction with their use in the field of education.

Usage of Smartphone

The majority of modern cell phones are referred to as smartphones since they have the most powerful computer and communication capabilities. The Smartphone has returned as a "new information average" (Iacobucci & Churchill, 2021) This is in addition to the Smartphone's basic capabilities to make voice calls, video calls, SMS, and MMS. Students were found to spend more time texting than listening to lectures in class, according to research. A mobile device commonly referred to as a "Smartphone" enables users to carry out activities including texting, calling, talking, documents, validating accessing emails. browsing the internet, and downloading files in a highly comfortable way. Smartphone technology offers users several advantages because it spreads information quickly and allows for speedy communication.

According to research by Doorn (2020), 55% of students use game applications on their smartphones either frequently or as a result of leisure activities. Even while in line at the coffee shop, people use their phones to seek information on Google, keep track of homework projects, and remain in touch with buddies from school and friends back home. 324 university students in Najran were surveyed by Alfawareh and Jusoh (2022) to determine the usage trends for smartphones in two different contexts: regular use and educational use. It turned out that the smartphone was employed in place of a desktop or laptop computer, and it has continued to show that university students have not fully utilized smartphones for educational purposes. Additionally, smartphones have been acknowledged for mucking up the impacts of text messages on students' learning.

Social Use of Smartphones

According to Kibona and Mgaya (2019), social media and technology (SMT) is a type of "web" building that enables people and organizations to share new user-generated material that is present in digital settings through two-way communication. The intriguing thing about social media is that it can be accessed through smartphones and mobile apps, making it much more convenient and accessible than just desktop or laptop computers. Facebook, Twitter, YouTube, Whatsapp, Instagram, a other websites and mobile blog, and applications that use social media are examples. According to Smartphone market data, university students are among the most common users.

According to Prasad, Lim, & Chen (2021), the number of pupils using oversized smartphones increases yearly. When he says, "Smartphones are changing the game when it comes to mobile communication between students universities, who are among the first person to embrace new technologies," Another major reason why students at colleges are purchasing cell phones in such big numbers may be their capacity to connect to their owners' favourite social networking sites.

Ball State University (2021) conducted a poll of 4907 students using smartphones and found that texting has surpassed e-mail and instant messaging as the most popular mode of communication, with 94% of students sending and receiving texts. Additionally, a poll of 270 students indicated that 65% of respondents used a Smartphone to access social networking sites and that 60% of students had recently loaded an app (Ball State University, 2009).

According to Anderson and Gerbing (2020), age and male academic applications

have a minor but considerable influence on how frequently Asians utilize their devices to complete activities compared to other ethnicities. Despite the fact that smartphones are now considerably more accessible, affordable, and cheap, students do not use them any more frequently. University students stay current on the newest technology, and utilizing a smartphone has obvious benefits for all students, especially since it gives them access to any knowledge or information whenever and wherever they need it. Smartphones provide an excellent opportunity for students to use their devices to aid in their academic pursuits. According to two polls performed in the United States by UC Davis and Ball State University, 43% of students at UC Davis and 38% of students there presently own smartphones, which is a significant number when compared to the current 20% national average. Students can greatly benefit from smartphones by using them to stay organized. Students can keep personal journals on their smartphones. Students can keep track of meeting minutes, test dates and deadlines, and test times by utilizing a smartphone as a personal organizer. They can also assist in creating study tables and contact lists, which will help the students stay organized. Students use their smartphones in a variety of ways, including to keep track of assignments, exams, and social events, to exchange emails with group project members, to watch lectures during study breaks, to conduct online research, to read eBooks while using the restroom, to write essays while waiting for the bus, and to listen to lectures while riding a bicycle. Online learning currently offers students all around the world a variety of chances and advantages. College students in 2022 were constantly communicating with friends, classmates, and professors via email, IM, or online conversation on wikis, blogs, and social networks. Even using smartphones made it much simpler to keep in touch and give quick responses.

Impact of Smartphone

Performance was described as the "clear expression, ideas, skills, and knowledge of a

person and planned grade that truly signifies the performance of students" by Liran and Miller (2020). The use of the internet for informational searches by students is becoming prevalent, according to (Ringle, Wende, & Will, 2022). Distance learning is similar to a tool for education that frees learners from the constraints of space and time while also offering a variety of learning opportunities. The flexibility of distance learning allows capable students to continue their education without interfering with their studies or personal lives. Therefore, a Smartphone may offer pupils this kind of educational facility, making it the ideal tool for distance learning. According to Kara Pag, smartphones play a crucial role in fostering collaboration between students and instructors within and outside of the classroom. However, a student can use a smartphone to attend class while they are absent for other reasons, such as illness, and continue their work. The usage of smartphones in the classroom can increase students' awareness of benefits including how simple it is to learn at any time or location and can also encourage educational them to engage in activities.Larcker and Fornell (2019). In the school, the majority of the pupils and teachers had smartphones.

Research Methodology

The design of this study was a descriptive survey. The population of the study was comprised of students from Public Sector University in Karachi. Simple random sampling was used to engage the respondents and the sample size consisted of 100 respondents. Further, the data were first analyzed using descriptive statistics of frequency distribution in which the variables were represented in tables and charts. In the second section, simple linear regression analysis was employed to examine the impact of Smartphones on the academic performance of students.

Sampling Selection and Data

The study consists of two sections. In the first section, the demographic information of the participants was given which included four

items i.e. gender, age, level of education, and CGPA. And in the second section, the items were constructed in the questionnaire to analyze the effectiveness of Smartphones and their impact on the academic performance of the students. Moreover, the items were measured on a 5-point Likert scale from Strongly Disagree=1 to Strongly Agree=5.

Data Analysis

The questionnaire was consisting of two sections. The first section consisted of demographic information whereas the second section consisted of a well-structured questionnaire constructed on liker-scale.

Demographic Information

Gender

Table 1

Frequency Distribution of Gender

	Male	Female	Total
Frequency	53	47	100
Percentage	53%	47%	100%

According to table 01, there were (53%) male respondents while less than half (47%) of the participants were female. The frequencies show

that there were more male respondents than female respondents.

Age

Table 2

Age of the Respondents

	16 to 20	21 to 25	26 to 30	More than 30	Total
Frequency	24	67	8	1	100
Percentage	24%	67%	8%	1%	100%

Table 02 shows that the age group between 21 -25 (67%) own Smartphone's than any other age group followed by the age group of 16 -20

(24%). So, it indicates that teenagers are more addicted and well aware of technological advancement than the age above 30.

Current Level of Education

Table 3

Current Level of Education

	Bs/B.Ed	Master	MS/M.Phil	Total
Frequency	30	69	1	100
Percentage	30%	69%	1%	100%

Table 03 shows that the majority of respondents using Smartphones were students of master's degree programs encompassing 69% whereas the frequency of BS program students is lower with 30%. So, this indicates

that master's degree students who fall in the age category of 21 -25 or who can be grouped as teenagers are more well-known with the advancement of technology and social networking.

CGPA

Table 4

CGPA of the Respondents

	1 and Less than 2 CGPA	2 and Less than 3 CGPA	3 and Less than 4 CGPA	4 CGPA	Total
Frequency	3	16	78	3	100
Percentage	3%	16%	78%	3%	100%

Table 04 mentioned that more than half (78%) of the respondent's CGPA was 3, as follows (16%) whose CGPA was 2, and only (3%) of the respondents whose CGPA was 4 whereas (3%) of the respondents are 1.

The result of the aforesaid table indicates that the majority of the participant's CGPA was

3 or more than 3. It shows that Smartphone usage has a significant impact on the academic performance of students as they are capable to cope with Smartphone usage and still perform well in the classroom. So, it means the usage of Smartphones has a positive impact on students' academic performance.

Items

I Spend Hours Using Smartphones

Table 05

	1 to 4 hours	5 to 8 hours	9 to 16 hours	16 to 24 hours	Total
Frequency	49	33	8	10	100
Percentage	49%	33%	8%	10%	100%

Table 05 shows the respondent's hours spend on Smartphone use per day. It indicates that less than half (49%) of the respondents spend 1 -4 hours using a Smartphone per day, among them (33%) of the respondents spend 5 -8 hours using a Smartphone per day while (10%) of the respondents spend 16-24 hours by using Smartphone for per day, and there are only (8%) of the respondents who spend 9 -16 hours by using Smartphone per day.

Based on the findings, the result indicates that most of the participants spent less time using Smartphones.

Prefer Using a Smartphone for Study Purposes to a PC

Table 6

	SD	D	Ν	Α	SA	Total
Frequency	7	9	24	34	26	100
Percentage	7%	9%	24%	34%	26%	100%

Table 06 depicts that the respondents like using Smartphones for study purposes more than PC. Data indicates that less than half (34%) of the respondents agreed with using Smartphones for study purposes than Pc, (26%) of the respondents strongly agreed while (24%) of the respondents were selected neutral among them (9%) of the respondents were disagreed like to use Smartphone for, and other (7%) of the respondents were strongly disagreed like to using Smartphone for study purposes than PC.

Hence, the result illustrates that Smartphone help students to a great extent in their study field, most of them like to use Smartphone for study purpose than PC and Smartphone can support them in their study anywhere and anytime rather than a PC, also Smartphone plays a great role in case unavailability of PC.

I use my Smartphone to Search Information for Completing Assignments Table 7

	SD	D	Ν	Α	SA	Total
Frequency	4	3	13	44	36	100
Percentage	4%	3%	13%	44%	36%	100%

Table 07 reveals that less than half (44%) of the respondents agreed to use a Smartphone to search for information for completing classroom assignments, (36%) of the respondents strongly agreed while (13%) of the respondents selected neutral, among them (4%) of the respondents strongly disagreed and only (3%) of the respondents disagreed on the statements.

The result illustrates that the majority of the respondents responded positively to using Smartphones to search for information for completing the assignments.

I use a Smartphone to Save Study Related Materials

Table 8

	SD	D	Ν	Α	SA	Total
Frequency	4	4	3	48	41	100
Percentage	4%	4%	3%	48%	41%	100%

Table 08 illustrates that less than half (48%) of the respondents agreed, (41%) of the respondents strongly agreed whereas (4%) of the respondents strongly disagreed and (4%) of the respondents disagreed equally, and only (3%) of the respondents opted neutral on the notion.

I find Smartphones helpful in Research Work

Table 9

	SD	D	Ν	Α	SA	Total
Frequency	3	6	12	39	40	100
Percentage	3%	6%	12%	39%	40%	100%

The result shows that the majority of the respondents responded positively as they use their Smartphones to save study-related materials, if students need those materials such as a place where their Pc or laptop is not available then they can easily get those materials on their Smartphones.

Table 09 depicts that less than half (40%) of the respondents strongly agreed, (39%) of

the respondents agreed while (12%) of the respondents opted to be neutral, (6%) of the respondents disagreed, and only (3%) of the respondents strongly disagreed with the statements.

The result illustrates that the majority of the students responded positively to finding the Smartphone as a helpful tool for research work.

Smartphone helps me in Covering Course Content

Table 10

	SD	D	Ν	Α	SA	Total
Frequency	4	12	11	47	26	100
Percentage	4%	12%	11%	47%	26%	100%

Table 10 illustrates that less than half (47%) of the respondents agreed, (26%) of the respondents strongly agreed, while (12%) of respondents disagreed, (11%) of respondents were neutral and only (4%) of the respondents strongly disagreed on this Discourse.

The result indicates that the majority of the respondents responded positively about the help of Smartphones in covering the course content.

A smartphone is an efficient device for e-learning

Table 11

	SD	D	Ν	Α	SA	Total
Frequency	6	7	19	45	23	100
Percentage	6%	7%	19%	45%	23%	100%

Table 11 illustrates that less than half (45%) of the respondents agreed, (23%) of the respondents strongly agreed, while (19%) of the respondents were neutral about the statement (7%) of the respondents were disagreed, and other (6%) of the respondents strongly disagreed.

The result indicates that the majority of the students consider the Smartphone as an efficient device for e-learning.

Smartphone helps me to be Independent in Learning

Table 12

	SD	D	Ν	Α	SA	Total
Frequency	5	5	24	36	30	100
Percentage	5%	5%	24%	36%	30%	100%

Table 12 indicates that less than half (36%) of the respondents agreed, (30%) of the respondents strongly agreed whereas (24%) of the respondents were neutral, (5%) of the respondents strongly disagreed and (5%) of respondents also respectively. The above-stated data specifies that the majority of the respondents responded positively regarding the help of Smartphones to learn independently. So it seems that Smartphone helps students with independent learning.

Inferential Statistics

Correlation of Smartphones on Students' Academic Performance/ (CGPA)

Table 13

Correlations			
		Smartphones	CGPA
Smartphones	Pearson Correlation	1	.824**
CGPA	Pearson Correlation	.824**	1

**. Correlation is significant at the 0.01 level (2-tailed).

In Table 13, the correlation coefficient (r) value between Smartphones and CGPA is 0.824which shows a high correlation positive correlation between the variable. The P value is <0.01 which means the relationship is statistically significant. So it is safely said the usage of Smartphones has a significant relationship with higher CGPA. Hence, the hypothesis is supported.

Table 14							
Model Summary							
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate			
1	.824ª	.678	.675	.29984			

a. Predictors: (Constant), Smartphone

As indicated in table no.14 value is 0.678 which means that the independent variable is the

usage of Smartphones causing a 67.4% change in the dependent variable which is CGPA.

. . .

ANOVA Analysis of Dependent and Independent Variables

Table	15					
ANOV	A ^a					
Model		Sum of Squares	Df	Mean Square	F	Sig.
	Regression	18.579	1	18.579	206.655	$.000^{b}$
1	Residual	8.811	98	.090		
	Total	27.390	99			

a. Dependent Variable: Academic Performance CGPA

b. Predictors: (Constant), Smartphone

In Table no. 15, the result of ANOVA reveals that the p-value is 0.000 which is less than 0.05; hence, it is said that there is a significant relationship between the independent variable which is the usage of smartphones and the dependent variable which is Academic Performance (CGPA). The table is concerned with the analysis of dependent and independent variables using ANOVA. The sig. value of ANOVA is 0.064 which shows that the model is not fit to predict the dependent variable C.G.P.A which is good to predict students' academic performance.

Coefficients showing Dependent and Independent Variables

Table 1	16					
Coeffic	zients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		В	Std. Error	Beta		
1	(Constant)	1.209	.115		10.483	.000
	Smartphone	.059	.004	.824	14.375	.000

a. Dependent Variable: Academic Performance (CGPA)

Table no. 16 shows the coefficient result that the beta value is 0.824 which means that the change in an independent variable that is the usage of Smartphones by one unit will bring about a change in the dependent variable which is CGPA by 0.824 units.

Discussion of the Findings

The study primarily focuses on the impact of Smartphone usage on Students' Academic Performance at Public Sector universities in Karachi. There is no denying the fact that advanced technology can transport information with easiness to individuals. Katawazai (2021). However, the overuse (i.e. using a Smartphone during class, spending too much time using a Smartphone) of smartphones can be a cause of numerous problems like poor academic performance, distraction from the study, etc. But, fortunately; the results reveal that students who participated in this research are not too addicted to the use of Smartphones rather they are capable to handle such devices and make their best choice on which Smartphone application to use smartly. Moreover, the findings of this study exposed that the majority of the students' results are not affected by the use of Smartphones. Ogba et al. (2020) As is found above the majority (49%) of the respondents tend to use Smartphones about 1 to 4 hours per day, and only (10%) of the respondents spend about 16 out of 24 hours per day. Male students are comparatively more addicted to and interested in using smartphones than female students because (53%) of the respondents were male, and among those respondents, the majority of them (67%) are under the age of 21 to 25 years old, indicating that teenagers are more addicted to the use of smartphones. The most notable results are that the majority (74%) of students avoid using a cell phone during class and (26%) stay in touch to use their phones while they are using the restroom, there is a positive correlation between the students' C.G.P.A and the influence of Smartphone usage because more than half (78%) of the respondents' CGPA was found in 3 or more than 3 CGPA. It found that the major purpose of using Smartphones by students is because they are mostly adopting the positive sides of Smartphone usage. Moreover, the results show that the majority of respondents agree that the Smartphone has a significant impact on their academic performance because they use it for a variety of academic activities, including downloading lecture-related materials. searching for educational programs online, reading e-books, finding information to complete assignments in class, saving study materials, using it for elearning, conducting research, etc. The vast majority of respondents concurred with all of these statements regarding Smartphone usage.

Recommendation

There are many approaches to managing and reducing the negative effects that smartphones have on kids' academic performance. "Guidance and Education" teaches users how to use smartphones wisely, focuses on enhancing the positive aspects and emphasizing the influences, and negative helps users understand the pros and cons of smartphones so that they can understand how to benefit from the machinery that is already in place. Finally, it is advised to impose some restrictions on Smartphone use, such as making it a rule that students are not permitted to enter the lecture hall with their smartphones turned on, to help them focus and pay attention to lectures, in order to improve students' grades even with smartphones.

Conclusion

The primary goal of the study was to look into how students at Karachi's Public Sector University were performing academically in relation to their use of smartphones. As smartphones are devices that can manage more information, this fact is widely understood. The Smartphone includes a wide range of functions that provide updated learning-based applications. The Smartphone is recognized as a crucial component in every part of modern life. Its use has a considerable impact on both professional and learning fields. The use of smartphones, their effects on students' academic performance, and their significance for university students' studies are all introduced. Some academics believe that using a Smartphone as a tool can help students perform well in their studies, but others argue that using a Smartphone while lying in bed to take pictures and share them in a WhatsApp group can prevent students from understanding the importance of a result in studies. In addition, smartphones are starting to become the norm in society and may indeed have a big impact on students' academic performance and other areas of their lives.

In conclusion, the study used the findings to provide beneficial strategies for minimizing the negative effects and enhancing positive

features of Smartphone usage. Smartphones, without question, are a wonderful example of technology that simplifies human existence and fosters communication. However, people shouldn't rely on these gadgets exclusively for entertainment and isolation. Additionally, smartphones can unquestionably be smart if technologists and manufacturers understand their responsibilities regarding the wise use of such products to gain greater advantages in learning and education. Beyond simple facts, it is clear that there are many benefits to using a Smartphone and a few drawbacks. Therefore, rather than attempting to avoid using smartphones, it's crucial to be specific about how to prevent and end smart Smartphone usage.

References

Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, *103*(3), 411–423. https://doi.org/10.1037//0033-

<u>2909.103.3.411</u>

- Barnes, S. J., Pressey, A. D., & Scornavacca, E. (2019). Mobile ubiquity: Understanding the relationship between cognitive absorption, smartphone addiction and social network services. *Computers in Human Behavior*, 90, 246–258. <u>https://doi.org/10.1016/j.chb.2018.09.0</u> <u>13</u>
- Brown, S. (2010). From VLEs to learning webs: the implications of Web 2.0 for learning and teaching. *Interactive Learning Environments*, 18(1), 1–10. https://doi.org/10.1080/104948208021 58983
- Chiu, Shao-I. (2014). The Relationship between Life Stress and Smartphone Addiction on Taiwanese University Students: A Mediation Model of Learning Self-efficacy and Social Self-efficacy. *Computers in Human Behavior*, *34*, 49–57. <u>https://doi.org/10.1016/j.chb.2014.01.0</u> 24
- Doorn, O. N. (2020). Cyberloafing: A multidimensional construct placed in a Theoretical framework. Published master thesis. EindhovenUniversity of technology.
- Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The Benefits of Facebook "Friends:" Social Capital and College Students' Use of Online Social Network Sites. Journal of Computer-Mediated Communication, 12(4), 1143–1168. https://doi.org/10.1111/j.1083-6101.2007.00367.x
- Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. Journal of Marketing

Research, *18*(1), 39–50. https://doi.org/10.2307/3151312

- Iacobucci, D., & Churchill, G. A. (2010). *Marketing research*. Mason, OH: South-Western Cengage Learning.
- Kibona, L., & Mgaya, G. (2019). Smartphones' effects on academic performance of higher learning students. Journal of Multidisciplinary Engineering Science and Technology, 2(4), 777–784. https://www.jmest.org/wpcontent/uploads/JMESTN42350643.pdf
- Lee, J., Cho, B., Kim, Y., & Noh, J. (2022). Smartphone addiction in university students and its implication for learning. Springer.
- Liccardi, I., Ounnas, A., Pau, R., Massey, E., Kinnunen, P., Lewthwaite, S., Midy, M.-A., & Sarkar, C. (2007). The Role of social networks in Students' learning experiences. ACM SIGCSE Bulletin, 39(4), 224–237. https://doi.org/10.1145/1345375.13454

https://doi.org/10.1145/1345375.13454 42

- Liran, B. H., & Miller, P. (2017). The Role of Psychological Capital in Academic Adjustment Among University Students. Journal of Happiness Studies, 20(1), 51–65. https://doi.org/10.1007/s10902-017-9933-3
- Najmi, A., Qazi, W., & Raza, S. A. (2018). Does statistics anxiety affect students' performance in higher education? The role of students' commitment, selfconcept and adaptability. International Journal Management of in Education, 12(2), 95-113. https://doi.org/10.1504/ijmie.2018.100 09634
- Prasad, S., Lim, V. K. G., & Chen, D. J. Q. (2010). Self-Regulation, Individual Characteristics and Cyberloafing. *PACIS* 2010 Proceedings. https://aisel.aisnet.org/pacis2010/159
- Ringle, C. M., Wende, S., & Will, A. (2022). Smartpls 2.0. <u>http://www.smartpls.com</u>