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Role of Smartphone Devices in Motivation to Study in the COVID-19 Pandemic

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Authors
Herlambang S.*[1] *PhD,*
Wahyudiyono[1] *PhD,*
Subiyantoro A.[1] *PhD,*
Jumintono[2] *PhD,*
Madu L.[3] *PhD,*
Hartati R.[4] *PhD*

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[1]Department of Administrative Management, Academy of Management Administration Yogyakarta, Daerah Istimewa Yogyakarta, Indonesia
[2]Faculty of Technical and Vocational Education, Universiti Tun Hussein Onn Malaysia, Johor, Malaysia
[3]Department of International Relations, Universitas Pembangunan Nasional "Veteran" Yogyakarta, Daerah Istimewa Yogyakarta, Indonesia
[4]Department of Management, Sekolah Tinggi Ilmu Manajemen YKPN, Daerah Istimewa Yogyakarta, Indonesia

Correspondence
Address: Jl.Sadewa, Cepor RT.04, Sendangtirto, Berbah, Sleman. Postal code: 55573
Phone: +62 (812) 18213005
Fax: -
susatyo.herlambang@gmail.com

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ABSTRACT

Aims The sudden COVID-19 pandemic experienced globally has caused many schools and institutions of higher learning to resort to fully online teaching and learning throughout the world. Since online teaching is essentially a student-centered learning approach, students' motivational level plays an important role in making teaching protocols effective. This study aimed to know the level of motivation to study using a smartphone in the COVID-19 pandemic.
Instrument & Methods This descriptive study was carried out in 2020 on 75 Indonesian Academy of Administrative Management College students who have smartphones. These students were selected by random sampling method. Data were collected using a researcher-made questionnaire and analyzed by SPSS 17 software using Pearson correlation coefficient and simple linear regression test.
Findings There was a positive and significant correlation between the mean score of smartphone usage and the mean score of study motivation (r=0.84; p=0.0001). The effect of smartphone uses on the study motivation in the Covid-19 pandemic was 61.7% (R2=0.617).
Conclusion With the increasing use of smartphones, the motivation to learn during pandemic COVID-19 also increased.

Keywords COVID-19 Pandemic; Motivation; Smartphone; Reading

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Introduction

In December 2019, Coronavirus Novel knew as COVID-19 was found in Wuhan, China [1]. COVID-19 is found in Hunan, a seafood market, Wuhan City, China. Since it was first discovered, COVID-19 spread rapidly throughout China [2]. A COVID-19 Virus originated in Wuhan, Hubei province, China, quickly spreading worldwide with 970,000 confirmed cases on April 3, 2020. With the world spreading, the COVID-19 virus is expressed as a pandemic by WHO. With the announcement of an epidemic, some countries imposed lockdown and restrictions on visits [3]. The Government recommends not to travel to high-risk areas and not consume meat from the infected area of the COVID-19 outbreak [4]. Everyone worldwide began to do social restrictions and keep the distance between people to avoid spreading the COVID-19 virus. This condition causes all work and learning activities done at home. Maintaining the social distance emphasizes motivation and psychology, especially for teenagers [5].

COVID-19 has influenced educational activities in the world [3, 6]. Impact on mental health during pandemic COVID-19 [7]. While studying at home, computers and the internet have become a need to deliver teaching and learning [8]. Online learning pedagogy employs technology to provide a quality learning experience for students [9]. Smartphone means to be one of the tools to communicate and learn online through the internet. Information technology, especially the internet, will still be the center of post-pandemic attention, where innovation will encourage the surge of use [10-12]. Today's generation grows with smartphones from an early age [13, 14]. Smartphones replace mobile phones, but, to some extent, they also replace personal computers and many other devices [11, 15]. The development of smartphone technology is constantly changing rapidly, following spinning time movements. Smartphones offer a relatively secure environment where people do not need to communicate, socialize, or meet in real [16]. The development of smartphone technology facilitates the studying process to increase motivation to study. Smartphones not only increase motivation but can decrease the motivation of users [17]. The motivational factor of using smartphones enhances smartphones or electronic media devices by students [14]. Smartphone usage and high motivation can explain smartphones' development [16]. There is a connection between motivation and smartphone use [18]. Smartphones also increase motivation for reading [19]. Research also suggests that smartphone use can be a mental improvement solution [20]. Studies on social networks show that online activities are associated with motivation [21]. Motivation is an essential factor in people's behavior in relationships [22]. Motivation is the key to directing someone's behavior [23]. Intrinsic or extrinsic motivation is key to completing a person's task [24]. Motivation is the ever-changing personal influence [25]. Motivation-related research suggests that intrinsic motivation is much stronger than extrinsic motivation [26]. Many researchers have shown that intrinsic motivation provides a more significant impact [27]. Extrinsic motivation makes the job fun [28]. Research on the intrinsic motivation to share knowledge suggests that intrinsic motivation is much stronger than extrinsic [22]. Intrinsic motivation can produce quality learning [29, 30]. Students' learning environment and motivation differ in an online study [31]. A learning environment can improve learning motivation [32]. Scientists find that boosting motivation with learning experiences [33]. Many theories explain motivation [34]. The motivation that the students own can improve thinking skills.

According to the lack of data in this field, this study aimed to know the motivation to study using a smartphone in the COVID-19 pandemic.

Instrument and Methods

This descriptive research was conducted in 2020 on 300 Indonesian Academy of Administrative Management College (M=100, and F=200) who have a smartphone. Among these students, 75 were selected by random sampling method. In this way, the researcher was present at the campus at certain times and distributed the questionnaires randomly among the students present. Slovin formula with a confidence of 90% was used to determine the sample size.

Data were collected using a researcher-made questionnaire consisting of 12 questions (6 questions about smartphone usage and six questions about study motivation). The total scoring of the questionnaire is given by adding up the scores of the individual items from a minimum of 1 to a maximum of 5.

The reliability of the questionnaire was determined using Cronbach's alpha coefficient, which was 0.939 for the smartphone usage variable and between 0.851 and 0.893 for the related items. Also, Cronbach's alpha coefficient for the study motivation variable was 0.940 and for its items was between 0.846 and 0.905. The validity of the questionnaire was confirmed with an R-value of 0.2272.

Data were analyzed by SPSS 17 software. Kolmogorov-Smirnov test was used to examine the normality of the distribution of variables. Correlation between smartphone usage variable (as an independent variable) and study motivation variable (as a dependent variable) was determined using Pearson correlation test. A simple linear regression test was conducted to determine how much the level of influence between smartphones

was used towards study motivation in the pandemic of COVID-19.

Findings

The mean age of students was 13.4±2.8 years old. Also, 61% of students were female and 39% of them were male.

The Pearson correlation coefficient between the mean score of smartphone usage and the mean score of study motivation was strongly positive and significant (Table 1).

Table 1) Correlation between the mean scores of smartphone usage and study motivation in the studied students (n=75)

Variables	Mean±SD	Correlation Coefficient (r)	p-value
Smartphone usage	3.5±1.33	0.84	0.0001
Study motivation	4.75±2.48		

The regression equation was Y=7.863+0.677X which showed that if a smartphone use variable is zero or fixed, it will increase the study motivation in the pandemic COVID-19 period of 7.863 units or 78.63%. In the smartphone usage variable, 0.677 showed that learning motivation in the COVID-19 pandemic is 67.7% (Table 2).

The effect of smartphone uses on the study motivation in the Covid-19 pandemic was 61.7% (R^2=0.617; Table 3).

Table 2) Result of simple linear regression test

Variable	Unstandardized Coefficient		Standardized Coefficient	t	p.
	B	Std. Error	Beta		
Studymotivation	7.863	1.582	-	4.972	0.0001
Smartphone usage	0.677	0.062	0.785	10.842	0.0001

Table 3) Coefficient of determination test (Model summary)

R	R Square (R^2)	Adjusted R^2	Std. Error of the Estimate
0.785	0.617	0.612	2.139

Discussion

A COVID-19 pandemic is a global event that has had unprecedented effects on adolescents' daily lives [5]. The Covid-19 pandemic has led to an inevitable surge in digital technologies due to the social distancing norms and nationwide lockdowns [10]. The increase of the Covid-19 coverage and impacts has caused the abolishment of teaching and learning processes in class. As the replacement of face-to-face learning in the classroom, schools conduct online learning remotely using digital platforms [37].

The sudden COVID-19 pandemic experienced globally has caused many schools and institutions of higher learning to resort to fully online teaching and learning throughout the world. The unprecedented academic environment brought by the COVID-19 pandemic led to the evolution of online teaching as an ineluctable tool for education and training. Since online teaching is essentially a student-centered learning approach, the motivational level of students plays an important role in making teaching protocols effective [38].

Due to the sudden transformation from a traditional face-to-face learning approach to remotely digital learning, some present studies revealed that students' motivation in online learning was intrinsically and extrinsically affected [37]. Motivation refers to processes that instigate and sustain goal-directed activities. Motivational processes are personal/internal influences that lead to choice, effort, persistence, achievement, and environmental regulation [25]. This study aimed to determine the level of motivation to study using a smartphone in the COVID-19 pandemic. Our results showed that the use of smartphones affects study motivation in the COVID-19 pandemic.

Sociolwati examined the relationship between student learning environments and academic achievement motivation by studying the 2017 and 2018 students of Management Study Program STIE Dharma Agung. The results showed no positive and significant relationship between the learning environment of students and learning achievement motivation [32]. Also, Tam et al. investigated the factors that underlie the continuance intention to use mobile apps. Their findings indicated that mobile apps' most important drivers of continuance intention are satisfaction, habit, performance expectancy, and effort expectancy [34].

Rahiem's study aimed to analyze what university students in Indonesia liked and disliked about the emergency remote learning process, which was implemented due to the COVID-19 pandemic. The results revealed what the students liked about learning from home during the COVID-19 crisis, grouped into three overarching themes: flexibility and efficiency, self-care and self-development, and learning new technology. What they disliked was grouped into three main themes: lack of structure, technological difficulties, and financial barriers. By knowing what students liked and disliked, the obstacles to their learning experience could be reduced, the quality of remote learning in this pandemic could be enhanced, and student's ability to study in any circumstances could be increased [35].

Sri Gustiani' conducted a study to illuminate the students' motivation at the English Department of Sriwijaya Polytechnics toward their online learning during the Covid-19 pandemic. It was revealed that the student's motivation toward online learning was intrinsically affected more by their ambition to learn new knowledge and enjoyment in experiencing new learning methods. It was also influenced extrinsically by external regulation and environmental conditions. However, amotivation or the state of lack of motivation also happened due to poor external supporting facilities [37].

In Usher et al.'s research, students reported decreased academic motivation and self-regulation

(e.g., focusing, juggling responsibilities). Over 75% reported increases in stress, which they attributed most frequently to motivational and academic challenges. Although most perceived their instructors as understanding, nearly half reported a decline in instructional quality and communication after the shift to remote instruction, over one-third of students reported feeling less certain about their future educational plans. Implications for the provision of institutional and instructional supports for college students during and beyond the pandemic are discussed [40].

Quasi-experimental research was applied by Nguyen for 288 third-year students of law joining the second criminal law course at a university in Viet Nam to investigate the correlation between online learning barriers and motivations. The findings revealed that the extrinsic barriers had more impact on motivation than intrinsic ones; extrinsic barriers had a high impact on students' motivation and learning results than the traditional learning method. The data also expressed that the motivation-boosting activities in the online learning process led to positive changes in students' learning motivation and academic achievement [39].

Conclusion

Smartphones significantly affect the study's motivation in the COVID-19 pandemic.

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