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Students' Readiness During Mathematics Online Learning: The Impact Towards Students' Performances

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Abstract

The outbreak of pandemic of COVID-19 was affected the education system; hence, this study aims to identify the relationship between students' motivation, self-efficacy, situational factor and their performance in Mathematics and also to explore which students' readiness most influence students' performance in subject of Mathematics. The respondent of this study consisted of 105 form five students from SMK Bakti. The method of data collection involves the constructions of a questionnaire in the form of Google Form, and it is distributed online to respondents through WhatsApp application. The research finding indicates that there are no significance relationship between students' motivation, self-efficacy as well as environmental factors and students' performance in Mathematics subject. The researcher also found that motivations are the most affect students' performance compared to self-efficacy and situational factors. Therefore, the school and parents can work together and monitor their children so that they are stay motivated and more focused on their studies.

Keywords: Students' Readiness, Mathematics, Online Learning, Students' Performances, Self-Efficacy

Introduction

In late December 2019, a previously unidentified Coronavirus, has been named as Coronavirus Disease-2019 (COVID-19). It emerged from Wuhan, China, and resulted in a formidable outbreak in many cities in China and expanded globally (Wu, Chen, & Chan, 2020). COVID-19 virus spread primarily through saliva or droplets from the nose when an infected person coughs or sneezes (World Health Organization: WHO, 2020). With a sudden increase in COVID-19 cases from a few hundreds to a few thousands in a short span of time, our then Prime Minister, Tan Sri Muhyiddin Yassin has declared that the entire country was placed on a Movement Control Order (MCO) started on 18 March 2020 (Tang, 2020).

The countrywide restriction of movement and mass assembly included all religious, sports, social and cultural activities (Tang, 2020). In an article from Tang (2020), all nurseries, public and private schools, including boarding schools, international schools, tahfiz centers, as well as primary, secondary, and pre- university education institutions, were closed. All public and private universities, as well as vocational training centers, were included (Tang, 2020). In the research from Hussein, Daoud, Alrabaiah, and Badawi (2020), the closure of educational institutions in a short period of time has made face-to-face education replaced by online learning. The drastic change resulted in an enormous burden on all those involved in the education system (Hussein et al., 2020). According to research, most students were not ready with online learning (Kadek Erlita Dwiyanti, I Putu Yogi Pratama, & Marylena, 2020). Therefore, this study goes in-depth to identify the impact of students' readiness in the Mathematics during online learning on students' performances.

The research by Mohd Salleh, Md Ghazali, Wan Ismail, Alias, and Abd. Rahim (2020) stated that online learning with online courses was previously offered by only a few universities. Students do not have to physically attend classes if they take an online course, and it is ideal for part-time students because online classes can customize the student's schedule (Mohd Salleh, Md Ghazali, Wan Ismail, Alias, & Abd. Rahim, 2020). However, the pandemic of COVID-19 has led educational institutions around the world to fully moved to online learning (Kundu & Bej, 2021).

In Malaysia, there are about 4.9 million school students, 1.2 million in private and public higher education institutions and 130,000 international students (Mohd Salleh et al., 2020). During the pandemic, to ensure the continuation of education, online learning has replaced physical classes (Mohd Salleh et al., 2020). However, research done by Wijaya, Ying, Purnama, and Hermita (2020) stated that the students claimed that online learning is not effective, and they are not interested in online learning. The factor that made online learning not favorable for the students are internet connection, learning environment and the side effects of electronic devices on their health (Wijaya et al., 2020). All the factors have affected students' readiness in online learning.

Besides, students are shocked of this sudden change, and their fear perception is quite high (Kundu & Bej, 2021). A study by Kundu and Bej (2021) stated that some students might avoid being involved in communication due to their personality and they prefer face-to-face classes (Kundu & Bej, 2021). However, the students still have the motivation to continue their education virtually (Kadek Erlita Dwiyanti et al., 2020). The students also have high self-

efficacy in using technology since they grow up in the technology era (Kadek Erlita Dwiyanti et al., 2020).

Overall, research from Kundu and Bej (2021) stated that students' achievement in an online educational setting is just as effective as it is in traditional face-to-face instruction. Hence, the impact of students' readiness in the Mathematics subject during online learning on students' performance is discussed in this research.

The COVID-19 pandemic has had an unprecedented profound impact on the world (Khor, Arunasalam, Azli, Khairul-Asri, & Fahmy, 2020). As the rate of Covid- 19 cases in Malaysia rose significantly, the government issued a Movement Control Order, which forced schools and other learning institutions to shut down momentarily (Mohamad Nasri, Husnin, Mahmud, & Halim, 2020). Consequently, education was immediately transformed into the distance and remote formats (Mohamad Nasri et al., 2020). A study that was done by Widodo, Nursaptini, Novitasari, Sutisna, and Umar (2020) stated that the students' readiness is still lacking and there are need for some improvements to make it possible for effective online learning.

According to Wijaya et al., (2020), the average respondents' responses on the effectiveness of online learning during the pandemic is 38.92%. From that, it shows that online learning is not very effective. Besides, the research also stated that 58.76% of the respondents are not very interested in online learning (Wijaya et al., 2020). Next, another previous research that was conducted by Rafique, Mahmood, Warraich, and Rehman (2021), stated that male students are more comfortable with online learning compared to female students. Several students are holding out hope that online learning will be stopped, and that face-to-face learning will resume. The students still need some improvement for online learning (Widodo et al., 2020).

Besides, the students' motivation has decreased since the government announced MCO (Tan, 2021). In the research from Tan (2021), students' motivation dropped compared to before MCO. The result of the research showed that the mean for students' motivation before MCO is 4.87, but during MCO, the mean dropped to 3.39 (Tan, 2021). In research from Cardullo, Wang, Burton, and Dong (2021) stated the majority of students have stated they do not have adequate access to their devices and the internet during class time. The students also have to share the device with their school-age siblings (Cardullo, Wang, Burton, & Dong, 2021). On the other hand, the teachers claimed that it is difficult to communicate with the students and have to communicate through parents (Cardullo et al., 2021). Thus, this research would investigate on the impacts of students' readiness in the subject of mathematics on their performance during online learning in terms of motivation, self-efficacy and situational factors. The most prominent factor of students' readiness which influences the students' performance would also be determined in this research.

Based on the aim of the study, there are research questions as follows:

a) What is the significant relationship between students' motivation and students' performance in subject of Mathematics?
b) What is the relationship between students' self-efficacy and students' performance in subject of Mathematics?
c) Is there any relationship between students' situational factors and students' performance in subject of Mathematics?

d) Which is students' readiness most influences students' performance in subject of Mathematics?

Literature Review

In education, motivation plays crucial role in students learning (Tohidi & Jabbari, 2012). It can affect students on how they learn and how they behave towards subject matters. Motivation is divided into two which are intrinsic and extrinsic motivation. Intrinsic motivation is a motivation that driven by the interest or enjoyment in the task itself and it existed within the individual only (Tohidi & Jabbari, 2012). In contrast, extrinsic motivation is from outside of individual such as rewards, coercion and threat of punishment (Tohidi & Jabbari, 2012).

Research done by Ramadhani (2021) concluded that learning motivation affects students' performance. Motivation to learn is important for college students to attain their goals, and it has a significant impact on their academic performance (Ramadhani, 2021). The finding of the research was supported those statement where the finding resulted a positive regression value of 0.253 and a significance of 0.046 which is smaller than (0.1). It indicates there is significantly positive relationship between motivation and students' performance. Leitão, Maguire, Turner and Guimarães (2021) also supported that learning motivation have a good relationship with students' achievement. Motivation to learn is important for college students to attain their goals, and it has a significant impact on their academic performance (Ramadhani, 2021).

In a study by Hsia, Huang and Hwang (2016), it shows a positive correlation between students' performance in dancing class and intrinsic motivation in the pre- test and post-test. However, there is no significance difference between dance skills performance and extrinsic motivation in the pre-test and post-test (Hsia et. al., 2016). The students performed a better dance performance if and only if they have a high intrinsic motivation. Hsia et. al. (2016) also stated that the result that they got was concluded the motivation of students come from inner motivation such as satisfaction, challenges and enjoyment instead of from any rewards such as grades and praise.

Self-efficacy is focused on students' competencies on how they adapt and adopt the technology in learning and interaction students in the class. Self-efficacy is also one of major driving factor in online learning. In a recent article, Hobson and Puruhito (2018) done a study to understand what encourages students enrolled in distance-learning courses to learn and perform well. They identified that self-efficacy of distance learning not only correlated positively with final grade, but also with endogenous instrumentality, connectedness, and knowledge-building scales (Hobson and Puruhito, 2018). The result also showed that there is significant variation between gender on other study variable. Hobson and Puruhito (2018) also stated that female students has higher significantly compared to male students. However, for major/ non-major status, it resulted that there is higher significance for major status in self-efficacy, knowledge-building and connectedness orientation. In contrast, non-majors had significantly higher extrinsic instrumentality even though performance was found to be uniform. Overall, Hobson and Puruhito (2018) reported that only 4.2% of students who participated in the study did not pass the class.

According to Hsia et. al. (2016), there is a significantly positive correlation between dance skills performance and self-efficacy in the pre-test and post-test. That means the students will present a better performance when they have a high self- efficacy. This statement also in line with Bandura's (1997) research, which found that students with stronger self-efficacy had better learning outcomes (Hsia et. al., 2016). It also supports the hypothesis that proposed by van Dinther et al. (2011) which is self-efficacy could be a factor in students' learning performance (Hsia et. al., 2016). In research done by Miller (2019), it stated that academic self-efficacy does not affect students' performance. By using simple linear regression, the value of r=0.025 which is it indicates that the correlation is weak. The result is different from previous studies that found regrading academic self-efficacy and academic achievement in an online learning environment. In the same study, Miller (2019). reported that there were statistically significant between mathematics self-efficacy and academic achievement. Mathematics self-efficacy divided into two, which is mastery experience and verbal persuasion. For mastery experiences, it is positive correlated with academic performance. However, for verbal persuasion is negatively correlated with academic achievement. Miller (2019) stated that many published studies investigated the mathematics self-efficacy individually and no published studied was examining all sources of self-efficacy. Hence, for this research, the researcher will investigate the relationship between students' self-efficacy and students' performance in subject of Mathematics.

Situational factors describe the contextual dynamics that emerge from COVID-19 pandemic. According to Mamun, Hossain, Salehin, Khan, and Hasan (2021), situational factors is a combination of three sub-constructs: digital access, learning atmosphere and institutional support. Tao and Xu (2022) argued a tripartite support system for students' online learning of English that involves direct and indirect interactions among parents, teachers and students. Tau and Xu (2022) stated that parents play an important part in their children's online English learning. The findings showed that lower-grade parents are more likely to report intensive monitoring practice, but some higher- grade parent also mention constant monitoring out of concern that their children are not self-regulating. While grade level is an important mediator of monitoring level, parents emphasize that such monitoring practices must be tailored to their children's unique characteristics. Not only that, academic and affective support is found more frequently than technology support (Tau & Xu, 2022). It is because parents are closes to the students during online learning and usually students will ask the person who nearest to them and they comfortable to ask.

Jayawardena, van Kraayenoord and Carroll (2020) reported that the parents' involvement in their children's learning impacted on the students' learning. This included assisting students with schoolwork and accompanying youngsters on science-related outings (Jayawardena et. al., 2020). According to Jayawardena et. al.(2020), seven of the 12 respondents thought that the parents helped their children and performed their 'duty' by being involved in their children's learning. In addition, seven of the 12 respondents also explained that the educational support given by other family members assisted students' learning. Besides, school support and digital access also helps students during online learning. Jayawardena et. al. (2020) reported that most respondents stated that teachers' support and good digital access makes students more enthusiastic during learning and more determined to perform in science. In conclusion, in this research, the researcher will testify whether is there any relationship between situational factors and students' performance.

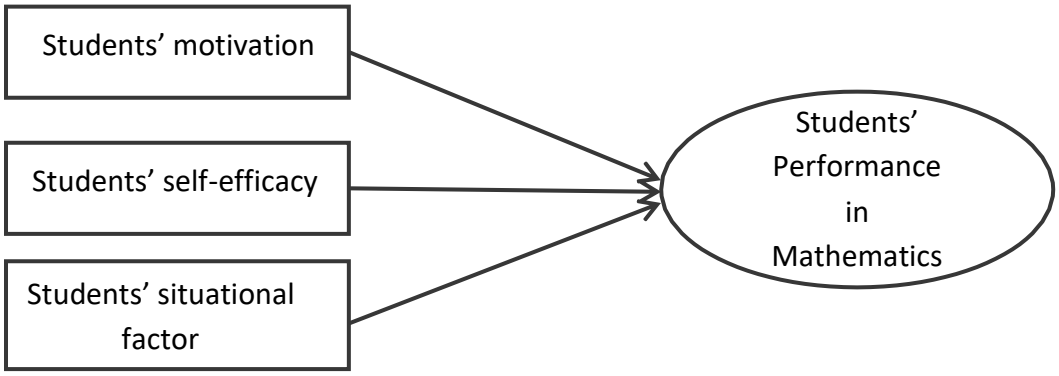

Figure 1: Conceptual Framework of the Study

In this research, the conceptual framework act as a strong structure to strengthen the research topic. Figure 1 consists of variables that the researcher would like to study. Motivation is the mainstay of students' readiness for online learning during pandemic. Online learning also requires students to dependents on technology and vital to them to equip themselves with computer/internet literacy. Besides, the home environment and educational institutions play a crucial role to support students in this pandemic situation. A calm and peaceful study space as well as supportive learning atmosphere has a major influence on student competency and attitudes toward learning. This situational specific factor therefore signifies the importance of students' psychological preparedness for online learning. Hence, motivation, self-efficacy and situational factors are important in online learning, and it may affect students' performance as well.

Methodology

In this research, the researcher focused on the readiness of the students and their attitudes towards online learning for the subject of Mathematics. Online learning had been implemented since Prime Minister Tan Sri Muhyiddin Yassin announced the nationwide movement control order (MCO) and the schools have been forced to close to prevent the spread of the coronavirus ("Covid-19 pandemic spurs Malaysia's home-based education," 2020). In general, the objective of this research is to identify the relationship between students' motivation, self-efficacy, situational factor and their performance in Mathematics and also to explore which students' readiness most influence students' performance in subject of Mathematics.

In this research, the researcher uses quantitative approach as research methodology. The quantitative data measured the readiness of the students and their attitudes towards online learning on Mathematics subject. A quantitative approach is a research method that emphasis on numbers and figures in the collection and analysis of data (Bryman, 2001 as cited in Eyisi, 2016). In other words, the purpose of a quantitative approach is commonly narrow and specific, focusing on quantitative data. Hence, this is very suitable for the researcher's objectives since this approach would be able establish generalizable facts about the students' readiness and their attitude towards online learning on subject of Mathematics.

Besides, this research used correctional design as the research design and quantitative data were collected through questionnaire since according to Mathers, Fox and Hunn (2007) questionnaires are the easiest and fastest method of collecting data. In other hands, correctional design mainly to study the relationship between variables (Chua, 2020). In correctional studies, statistical tests are used to calculate the correlation coefficient and it present the strength and direction of the relationship (Chua, 2020). The researcher also report about three thing which are significant relationship between the variables, the strength of relationship and the condition of the relationship. Hence, correctional design is suitable to this research since the objective of this research is to identify the relation between students' readiness and attitude of students towards online learning on subject of Mathematics.

The setting of this research is at SMK Bakti, Kubang Menerong, Pulau Pinang and the population of this study is all form five students where there are 265 form five students at SMK Bakti. The population is selected because this research wants to investigate about the impact on the students' performance with regards to their readiness during online learning in mathematics. Besides, form five students will face SPM soon and they are the first batch who learn KSSM syllabus, and the examination format also had a slight change. Hence, form five students are most suitable population for this research.

The sample of this study is 105 form five students. Since the researcher collected data through Google Form, the researcher used convenience sampling. Convenience sampling or accidental sampling is a type of non-probability sampling procedure where the sample is chosen because of easy accessibility, geographical proximity, availability at a particular time, or willingness to participate (Etikan, Musa, & Alkassim 2016; Chua, 2020). The researcher asked all form five students to share the link of Google Form to all form five students, so, when the students noticed the link, they would answer the Google Form.

The quantitative data is collected through questionnaire. The benefit of using questionnaire is questionnaires are the easiest and fastest method of collecting data (Mathers et. al, 2007). The questionnaire that is used to collect data for this research consist of four sections which Section A asks about students' demographic information such as gender, races and latest students' examination result of Mathematics subject. For Section B, there are 10 statements which includes students' motivation towards online learning for subject of Mathematics. In Section C and D, there are 9 and 8 statements respectively. The statements were about students' self- efficacy and situational factor towards online learning for subject of Mathematics.

The researcher run the pilot study to test reliability by using IBM Statistical Package for Social Sciences (SPSS). The value of Cronbach's Alpha for each component are shown in Table 1. The value of Cronbach's Alpha for each component is 0.90, 0.886 and 0.878 respectively, which it more than 0.70 and it indicate high reliability of each item.

Table 1
Reliability statistics for students' readiness in mathematics online learning
Reliability Statistics

Instruments	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Section B	.903	.910	10
Section C	.886	.884	9
Section D	.878	.878	8

The researcher chose questionnaire to collect data in form of Google Form. It distributed via online through Whats App to the students. The survey is distributed among form Five students. Before the researcher collected the data, the researcher asked permission from the school principal in order to conduct a study at SMK Bakti. The researcher also explained briefly about the objective of the research to the school principal. After obtaining the approval, the researcher ask help from form five teachers to distribute the link of Google Form to all form five students. Since this survey is conducted online, the students are free to answer the questionnaire anytime. Figure 2 shows that the data is collected within 3 weeks and then the data is analyzed using IBM SPSS Statistics 25.

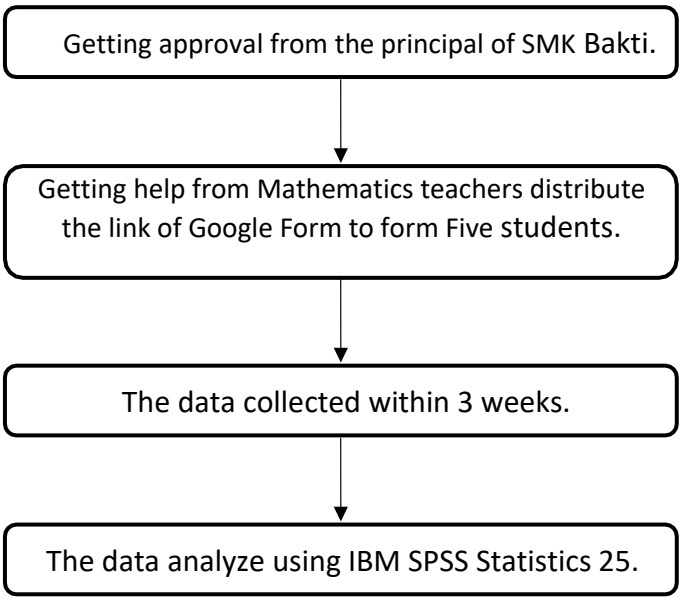

Figure 2 Data collection procedure

The data collected are analyzed quantitatively using IBM SPSS Statistics 25. Each research objective was analyzed using a different analysis. Table 2 shows the type of analysis of each research objective. The questionnaire consists of 4 sections including demographic analysis in Section A. The demographic profile was analyzed using the descriptive analysis to obtain the frequency and percentage of the 105 respondents.

Table 2
Data analyses table

Research Objective	Instruments	Respondents	Type of Analysis
To identify the relationship between students' motivation and students' performance in Mathematics subject.	Questionnaire	Form 5 Students (105)	**Inferential Statistics.** Pearson Correlation
To investigate the relationship between students' self-efficacy and students' performance in Mathematics subject.	Questionnaire	Form 5 Students (105)	**Inferential Statistics.** Pearson Correlation
To study the relationship between students' situational factors and students' performance in Mathematics subject.	Questionnaire	Form 5 Students (105)	**Inferential Statistics.** Pearson Correlation
To explore which students' readiness most influences students' performance in Mathematics subject.	Questionnaire	Form 5 Students (105)	**Inferential Statistics.** Multiple Regression

The first section of the questionnaire is about the demographic details of the respondents. The items that collected in that section is gender, races and examination result for Mathematics subject. Table 3 and Figure 4.2.1 below shows of frequency of respondents according to the gender and races.

Table 3
Table of demographic details of respondents by gender and races

		Race			
		Malay	Indian	Chinese	Total
Gender	Female	72	5	0	77
	Male	22	0	6	28

Findings

What is the significant relationship between students' motivation and students' performance in Mathematics subject?

Table 4 shows the correlation between students' motivation and students' performance for subject of Mathematics.

Table 4
Correlation between students' motivation and students' performance for subject of Mathematics
Correlations

		Latest result of examination	Students' motivation towards Mathematics online learning
Latest result of examination	Pearson Correlation	1	.127
	Sig. (2-tailed)		.196
	N	105	105
Students' motivation towards Mathematics online learning	Pearson Correlation	.127	1
	Sig. (2-tailed)	.196	
	N	105	105

Pearson correlation test was conducted to determine the between students' motivation and students' performance in Mathematics subject. The result shows that r = 0.127 and alpha-value = 0.196 which is larger than 0.05. This indicates students' performance and students' motivation towards Mathematics online learning has weak positive correlation. Hence, there is not statistically significant relationship between students' motivation and students' performance in Mathematics subject. Therefore, null hypothesis (H_0) is accepted where students' motivation has no relationship with students' performance in Mathematics subject and alternative hypothesis (H_1) is rejected where students' motivation has relationship with students' performance in Mathematics subject. Since the value of r^2 = 0.01613, hence, only 1.613% of students' motivation can be explained by the result of examination for Mathematics subject.

What is the relationship between students' self-efficacy and students' performance in Mathematics subject?

Table 5 shows the correlation between students' self-efficacy and students' performance in Mathematics subject.

Table 5
Correlation between students' self-efficacy and students' performance for subject of Mathematics
Correlations

		Latest result of examination	Students' self-efficacy towards Mathematics online learning
Latest result of examination	Pearson Correlation	1	.104
	Sig. (2-tailed)		.289
	N	105	105
Students' self-efficacy towards Mathematics online learning	Pearson Correlation	.104	1
	Sig. (2-tailed)	.289	
	N	105	105

The Pearson coefficient for students' self-efficacy and students' performance in Mathematics subject is r = 0.104, with p-value 0.289. The value of Pearson coefficient indicates that students' self-efficacy and students' performance in Mathematics subject have weak positive correlation. It also indicates that there is no significant relationship between students' self-efficacy and students' performance in Mathematics subject. Therefore, null hypothesis (H_0) is accepted where students' self-efficacy has no significant relationship with students' performance in Mathematics subject and alternative hypothesis (H_1) is rejected where students' self-efficacy has significant relationship with students' performance in Mathematics subject. Since the value of r^2 = 0.01082, hence, only 1.082% of students' self-efficacy can be explained by the result of examination for Mathematics subject.

Is there any relationship between students' situational factors and students' performance in Mathematics subject?

From Table 6, the value of r = 0.166 and p-value is 0.238 which is larger than 0.05. Its mean that there is weak positive correlation between students' situational factors and students' performance in Mathematics subject. Hence, there is no statistically significant relationship between students' situational factors and students' performance in Mathematics subject.

Table 6
Correlation between students' situational factors and students' performance for subject of Mathematics
Correlations

		Latest result of examination	Students' situational factors towards Mathematics online learning
Latest result of examination	Pearson Correlation	1	.116
	Sig. (2-tailed)		.238
	N	105	105
Students' situational factors towards Mathematics online learning	Pearson Correlation	.116	1
	Sig. (2-tailed)	.238	
	N	105	105

Therefore, null hypothesis (H_0) is accepted where students' situational factors have no relationship with students' performance in Mathematics subject and alternative hypothesis (H_1) is rejected where students' situational factors has no relationship with students' performance in Mathematics subject. Since the value of $r^2 = 0.02756$, hence, only 2.756% of students' situational factor can be explained by students' performance for Mathematics subject.

Which is students' readiness most influences students' performance in subject of Mathematics?

Table 4.3.4
Table of model summary
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.131[a]	.017	-.012	1.301

a. Predictors: (Constant), Students' situational factors towards Mathematics online learning, Students' motivation towards Mathematics online learning, Students' self-efficacy towards Mathematics online
learning

Table 4.3.5
Table of ANOVA

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.008	3	1.003	.592	.622[b]
	Residual	170.992	101	1.693		
	Total	174.000	104			

a. Dependent Variable: Latest result of examination

b. Predictors: (Constant), Students' situational factors towards Mathematics online learning, Students' motivation towards Mathematics online learning,
Students' self-efficacy towards Mathematics online learning

A multiple linear regression model was calculated to predict students' performance based on their motivation, self-efficacy and situational factors. The result revealed significant regression equation F(3, 101) = 0.592, p = 0.622. In Table 8 shows the value of r^2 = 0.017 which is it indicates 1.7% of variance in students' performance can be predicted from the variable students' motivation, students' self-efficacy and students' environmental factors. The regression equation is written as students' performance test predicted = 2.314 + 0.159 (students' motivation) + 0.003 (self-efficacy) + 0.084 (situational factors).

- Coefficient for students' motivation is 0.159. Hence, for every unit increase in students' motivation, it is expected that 0.159 point increase in the students' performance. However, students' motivation is not statistically significant predictor of students' performance, p=0.547.
- Coefficient for students' self-efficacy is 0.003, Hence, for every unit increase in students' self-efficacy, it is expected that 0.003 point increase in the students' performance. However, students' self-efficacy is not statistically significant predictor of students' performance, p=0.993.
- Coefficient for students' situational factors is 0.084. Hence, for every unit increase in students' situational factors, it is expected that 0.084 point increase in the students' performance. However, students' situational factors is not statistically significant predictor of students' performance, p=0.798.

Table 4.3.6
Table of Coefficients

Model	Variables	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.	95% Confidence Interval for B (Lower Bound)	95% Confidence Interval for B (Upper Bound)
1	(Constant)	2.314	0.573	–	4.042	0.000	1.178	3.450
	Students' motivation towards Mathematics online learning	0.159	0.263	0.091	0.604	0.547	-0.363	0.681
	Students' self-efficacy towards Mathematics online learning	0.003	0.304	0.001	0.008	0.993	-0.601	0.606
	Students' situational factors towards Mathematics online learning	0.084	0.328	0.048	0.257	0.798	-0.567	0.735

Conclusion

Summary of Findings

a) By using Pearson correlation, the result indicates that there is no significant relationship between motivation and students' performance. The result also indicates that motivation only play a small role in students' performance.
b) For self-efficacy, there is no relationship between self-efficacy and students' performance. Same as motivation, self-efficacy also does not affect students' performance.
c) Next, situational factors also have no significance relationship with students' performance. All those three variables have no significance relationship since p- value is greater than 0.05. and each r-values for all variable is less than 0.3 which indicates positive weak correlation.
d) By using Multiple regression, the researcher test which one most affect students' performance. Among those three variables, motivations the most affect students' performance compared to self-efficacy and situational factors.

Discussion of Findings

The findings of the research are contradicted with previous research. As mentioned in Chapter Two, motivation is important in online learning, and it is same goes to self-efficacy and situational factors.

For motivation, Ramadhani (2021) claimed that motivation has affect students' performance. In research done by Hsia et. al. (2016), the finding shows that only intrinsic motivation affects students' performance, while extrinsic motivation has no relationship with the students' performance. Intrinsic motivation is existed in inner of individual. Therefore, the students

must control their inner strength during online learning in order to perform in examination. In another research, Basila (2016) stated that motivation alone cannot affect students' achievement. It must be together with self- control and self-efficacy. The statement from Hsia et. al (2016) and Basila (2016) proved that motivation does not play a big role in for students' performance.

Next, self-efficacy is the one which the least percentage to give effect to students' performance. The finding was contradicted to Hobson and Puruhito (2018) and Hsia et. al. (2016). Even though Hobson and Puruhito (2018) claimed that self- efficacy affected the students' performance, however, they were look into gender and major/ non-major status perspective. They also stated that the number of male and female is not same where the majority is female. When it looked into a different perspective, it may result a different finding (Chua, 2020). However, Miller (2019) has same result as this finding where self-efficacy does not have relationship with students' achievement. Miller (2019) also stated that mastery experience actually affected the students' achievement. In this study, the researcher did not study about students' previous knowledge in Mathematics. by Miller statements, it might be true that the students have a weak prior knowledge in Mathematics before starting online learning. A weak prior knowledge is a main reason why students always failed to score in examination (Miller, 2019).

For situational factors, there is no relationship between situational factors and students' performance. Tao and Xu (2022) stated that parents play a crucial part in students online learning. A good parent who is always monitor and give support to their children during online learning will make students' enthusiasm to learning and the students also will not forget their learning goals. Jayawardena et. al. (2020) also has same consent where in their research, they had interviewed many respondents and most of the respondents agree that parents play a crucial part in students' performance. Not only that, they also stated that by strong support system from institutional and having a good digital access will make students more enthusiastic during learning and more determined to perform. In this research, the research has combined all in one section, therefore, by combining all into one was made the result change.

Among motivation, self-efficacy and situational factors, situational factors are the most who affects students' performance. it is proved by the result of the findings that shows situational factors have largest value of r compared to motivation and self- efficacy. Jayawardena et. al. (2020) stated that the students' readiness was influenced by several factors described as being: family-related, student-related, school-related, mass media and technology-related, and institution-related. The first three listed factors were referred to the most frequently (Jayawardena et. al., 2020). Family-related, school- related as well as mass media and technology-related is the thing that the researcher stressed out in this research.

Implications

The implication of this study is it will provide knowledge to many parties regarding the impact of students' readiness in online learning towards students' performance in subject of Mathematics. This research is important to parents and school. It is because they actually play a crucial role in online learning not for Mathematic only, but for all subject that students take. By having this research also will make parents and school can cooperate in order to

makes students enthusiasm to learning either during online learning or face-to-face. Furthermore, this research also will benefit the policy makers. Policy maker can commercial the impact of students' readiness towards their performance in online learning. Not only that, this research also can be a milestone to other researcher to study about students' readiness in different perspective.

Future Works

Since this study only focuses on form five student from SMK Bakti, future research could be conducted to a larger number of respondents from various schools such as full boarding schools, cluster schools and private schools to have an accurate data. By having respondents from various schools, a comprehensive analysis can be made by researchers to obtain higher validity of the results. This is because researchers can make comparisons students' lifestyle and students' motivation, self-efficacy and situational factors in online learning. The researcher also can study this research topic on other subjects which it may give a different result compared to this research's finding.

Besides, the researchers also can explore the relationship between teachers' readiness towards online teaching and their student's readiness for online learning for the next research. Both teacher and students must undergo online learning. Hence, this topic will come out other perspective which this research cannot explain. The researcher also can change to experimental research design where this study used correctional design. By using experimental design, the researcher can study the level of students' readiness during face-to-face and online learning.

Furthermore, the study supposed to conduct in face-to-face instead of online. However, due to the pandemic COVID-19, the data was collected using Google form. Since the test was conducted online, it difficult to get cooperation from all Form Five students. To get more data from students, it is best to do it face-to-face and in real time class. Due to time constraint, some inadequate and irrelevant facts and details may have been used or gained when researchers were in a rush.

This research contributes theoretically and contextually by challenging the conventional understanding of students' readiness factors—motivation, self-efficacy, and situational influences—in shaping academic performance, particularly in online mathematics learning. The findings indicate that none of these variables significantly predict performance, with weak correlations across all, although motivation showed the relatively highest influence among them. This contradicts prior studies that emphasized the strong role of intrinsic motivation, self-efficacy, and parental or institutional support, highlighting instead that their impact may vary depending on contextual conditions such as prior knowledge, gender, or the learning environment. By situating the study during the COVID-19 online learning transition, the research reveals how situational disruptions and students' weak prior mathematics foundation could diminish the effects of traditionally influential factors. The significance lies in reframing readiness theory by demonstrating that context-specific conditions, such as digital access, parental involvement, and institutional support, may outweigh motivational or psychological constructs, offering fresh insights for parents, educators, and policymakers.

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