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### Abstract

Nowadays, educational institutions are compelled to modify their instructional approaches to incorporate digital platforms which leading to the emergence of Online Distance Learning (ODL). The transition from traditional educational settings to flexible learning in response to the COVID-19 pandemic has presented many obstacles for both educators and learners. Various platforms, including university academic websites, Google Classroom, Microsoft Teams, Zoom, and others, are employed to facilitate the fulfilment of students' online learning obligations. However, the students faced many circumstances regarding their virtual classes such no proper devices to equip during study sessions, environment is not conducive, poor internet connection, worrying about graduating on time and future employment which affected their academic performance. Therefore, this study is conducted to determine the significant factors (family members, peer influence, financial management, study environment and online teaching) that affect the students' academic performance (CGPA). Based on the Multiple Linear Regression analysis, this study found that variable of family members ( $p$ -value = 0.027) affects significantly to the academic performance. This study can be beneficial and raises awareness to many people including family members, lecturers, counsellors, university administration and government. The academic accomplishment of students is more certain when all stakeholders fulfil their respective responsibilities.

**Keywords:** Academic performance, Online distance learning, Students, Multiple linear regression

### 1. Introduction

The Coronavirus Disease (COVID-19) pandemic has resulted in the closure of educational institutions worldwide. All students regardless of age had to experience online classes at home instead of having face to face classes According to Li and Lalani (2020), over 1.2 billion of children, teenagers and young adults are out of the classroom around the world. As a result, educational institutions are being pushed to shift their learning techniques to digital platforms, giving rise to the term of Online Distance Learning (ODL). Platforms such as the university academic website, Google Classroom, Microsoft Teams and zoom are used to cater the students to do their tasks during ODL. The process was not easy for many students especially to the ones

who are less fortunate where they are not well equipped with devices such as smartphones, laptops or tablets and their study place is not conducive enough to be conducted at home with the chaos happening around them.

Moreover, a study conducted by Al-Kumaim et al. (2021) found that 69.5% of respondents representing university students in Malaysia felt overburdened through ODL. This problem arises due to the situation of poor internet connection or limited internet access during virtual classes, lack of ICT (Information Communication Technology) skills and lack of experience using online learning platforms. Furthermore, according to Chisadza et. al (2021), students' performance is related to good online access, whether via WiFi or mobile internet data. The same study also found that students who encountered difficulties during this rapid transition to online classes had poorer academic performance. The researchers suggested that the digital infrastructure should be improved and amend to the needs of learning.

The Malaysian Communications and Multimedia Commission (MCMC) revealed that broadband internet traffic soared by 23.5% during the first week of Movement Control Order (MCO) due to e-learning, work from home, etc. Many students from the Bottom Tier Income Earners (B40) depend on their hotspot usage to amend with their classes. Moreover, poor living conditions are said to be one of the difficulties that students experience when attending online classes. It is crucial for advanced education foundations to help these students, particularly with adapting to anxiety during this upsetting period.

In addition, study conducted by Arias, Swinton, & Anderson (2018) found that students' performance in academics are much more outstanding and statistically better in face-to-face classes compared to online classes for assessments such as test, final examination and assignments. This study has demonstrated that the challenges experienced by university students during ODL have a significant influence on their academic success. Therefore, the purpose of this study is to determine the factors influencing students' academic performance through ODL.

## **2. Literature Review**

A study conducted by Son et. al (2020) has found that 82% of participants from universities in the United States agreed that their studies are badly affected by the outbreak. The participants' responses displayed that initially, they were concerned with the sudden transition from having physical classes to online classes. The university students were concerned about their progress in their tasks online such as conducting research and projects. The students also mentioned about their lack of motivation to study. These findings have shown that many students around the world regardless of their age, race, nationality and ranking of the universities are impacted from ODL method. Students are not disregarded from being affected by the pandemic especially when they have no other option than having to have online classes. With this swift change in the education field, students' academic performances are on the edge because they must go through numerous obstacles especially with studying online using their own technology equipment at home, (Al-Kumaim et al., 2021).

### **2.1 Family Members**

During ODL, most of the students are at their home where their family lives instead of being on campus. Moreover, students must be prepared with having to do their classes at home. According to Gao et al. (2021), the process of online learning is significantly influenced by the support from the family. The researchers used a multiple mediation model which concluded that it can academically help students when the family creates a conducive environment to do online

classes. Dedication and positive emotions shown by family members also aid in the students' success of academic performance. OECD (2020) supported that students' attitude towards ODL is greatly influenced by the support received by families. One of the forms of family support includes parental emotional support which is prominent in the development of positive attitude while facing ODL. Having a positive attitude during classes can maximize students' ability to do their best with the opportunities given. Unfortunately, some families are not capable in providing those support especially during the pandemic due to lack of time and having other commitments.

## **2.2 Peer Influence**

According to Sun, Lin, and Chung (2020), due to the ODL method, students have little opportunities to interact with their peers physically. Although the existence of online platforms makes people feel more connected to each other no matter the distance, it cannot replace the face-to-face human interaction where people can share thoughts and ideas between them. It is much easier to guide and help each other with physical interaction rather than through online platforms. Peers are simply other students who understand and go through the same struggle with online learning. During this time around, it is best for them to play a part as a good support system to students as they relate to the same pressure during the pandemic outbreak. Wilczewski, Gorbaniuk, and Giuri (2021) highlights the struggles of international students. The experience of being a part of this pandemic season is challenging for this group of students as many of them did not get enough support from family and friends physically. Therefore, it can affect students' academic performance.

## **2.3 Financial Management**

Furthermore, Dang and Bulus (2015) investigated and found that education is expensive to students who do not receive or apply any financial aid during their studies because it can arise to have financial strains to them and causes them to perform poorly in their academic. Some students are still facing financial problems like mismanaging their finance even though they received aids, loans and scholarships from numerous organisations, authorities and companies. Based on Norvilitis et al. (2006), it has shown that students with huge number of debts are corresponded to lacking information in managing their money issues and students with many financial obligations are very self-aware of their crisis could lead to face.

## **2.4 Study Environment**

Besides that, a study space really plays a huge role for students to have their own privacy to study online. Through ODL, students should be extra cautious with their surroundings' cleanliness to avoid attracting diseases that could be fatal to them and others. Besides, Zhong, Yuan, and Fleck (2019) stated that if the study space lacks fresh air, the temperature is too high or too low, too many noises in a room, uneven lighting to study can influence the students' performance in academics during their online classes. Furthermore, students must consider using comfortable and safe furniture like getting a proper table to study and a chair to sit on when studying to improve focus in classes and during studying. According to Parvez, Rahman, and Tasnim (2019), students who sit on uncomfortable furniture could cause bad posture of their back and suffer problems like having bad backache.

## **2.5 Online Teaching**

Learning and teaching online is not an easy task done by students, teachers and lecturers especially in this pandemic breakout. According to Lederman (2020), educators and students are put under so much pressure when they must go through online learning. Research conducted by Lim (2020) found that with many online educational platforms on the internet, some websites and applications could cause hassle and complication for the students to use them since the features were not friendly enough to use. For instance, when there are too many students in a video-conferencing classroom, there will be some troubleshooting problems that would cause some of the students with poor internet connection to be dropped from the call and causes lack of focus in class.

## **3. Methodology**

This section discusses the sample size, data collection procedures, and data analysis methods employed in this study.

### **3.1 Research Design**

The data was obtained through online questionnaires which determined that it is a primary data. The factors chosen specifically targeting on family members, peer influence, financial management, study environment and online teaching. The data used for this study was only obtained once from the respondents. Therefore, the single cross-sectional design is the most suitable method to be applied in collecting the data from the students.

### **3.2 Sampling Method**

The sample method employed in this study was non-probability sampling, namely the convenience sampling method. This sampling method is very practical to apply in this study because of the less time taken to collect data and easily distributed to any students of UiTM Seremban 3.

### **3.3 Research Instrument**

Questionnaire is designed and divided into 6 sections which are section A, B, C, D, E and F. Section A is demographic where respondents are asked about their background such as their email, gender, level of study, student ID, telephone number, age, faculty, semester, Cumulative Grade Point Average (CGPA), preference on mode of learning, and family income (RM). In section B, C, D, E and F the respondents are required to answer questions on factors that affect their academic performance during ODL among university students. These sections used Likert Scale with ten options of answers provided from “Strongly Disagree” to “Strongly Agree”.

These questionnaires were generated by adopting from much previous research regarding the factors that affect the academic performance during ODL among students around the world. The instrument used in the study was culled from the different authors. The data has been collected, organized then proceed with analyzing the data through Statistical Package for Social Sciences (SPSS).

Constructed statements that measured the research participants’ responses were adapted from several instruments and validated to test the reliability. The Cronbach’s Alpha value for each independent variable exceeded 0.6. The variable with the highest value of Cronbach’s Alpha (0.952) is study environment while online teaching has the lowest value of Cronbach’s Alpha

(0.834). Lastly, the overall reliability value of Cronbach’s Alpha is 0.641, indicating that all scales of independent variables are reliable and consistent.

**3.4 Population and Sample**

The population for this study were all the students from Universiti Teknologi Mara (UiTM) Negeri Sembilan campus of Seremban 3. There are 5642 students in total consisted of diploma and degree students from three faculties that are available in UiTM Seremban 3 which are Faculty of Administrative Science and Policy Studies (FSPPP), Faculty of Computer and Mathematical Sciences (FSKM) and Faculty of Sports Science and Recreation (FSR). For this study, a total of 360 samples are chosen from diploma and degree students from FSPPP, FSKM and FSR in semester 2 until semester 7. The number of samples was calculated using Raosoft software. Table 1 shows the demographic profile of the respondents.

Table 1: Demographic profile of the respondents (n=360)

Characteristics	Frequency	Percentage
<b>Gender</b>		
Male	78	21.57
Female	282	78.43
<b>Level of Study</b>		
Diploma	35	9.62
Bachelor’s Degree	325	90.36
<b>Faculties</b>		
Faculty of Sport and Recreation	22	6.12
Faculty of Administrative Science and Policy Studies	153	42.57
Faculty of Computer and Mathematical Sciences	185	51.31
<b>Semester</b>		
2	4	1.17
3	100	27.99
4	59	16.33
5	82	22.74
6	100	27.70
≥7	15	4.08

**3.5 Theoretical Framework**

Figure 1 shows that the academic performance (CGPA) which is the dependent variable in this study depends on the independent variables which are the factors that affects the academic performance through ODL among UiTM Seremban 3 students namely as family members, peer influence, financial management, study environment and online teaching.

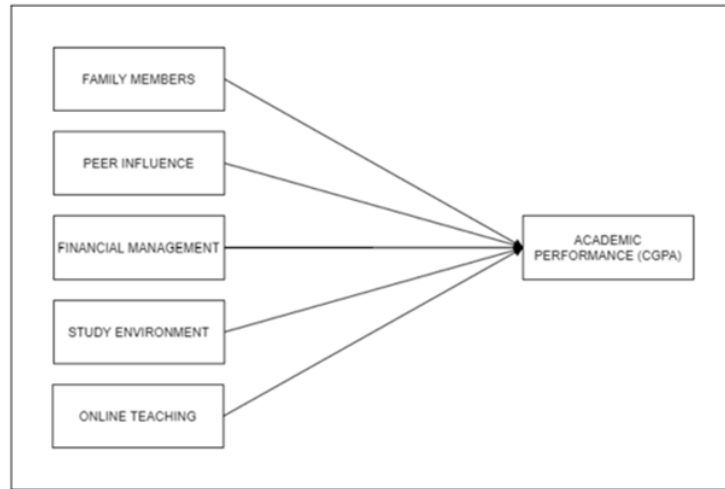


Figure 1: The theoretical framework of the study

### 3.6 Data Analysis

In multiple linear regression, the determination of which independent variables contribute significantly to explaining the variability in the dependent variable is a common goal. The procedure constructs a series of regression models in which variables are added or removed at each step. In general, the multiple regression equation of  $y$  on  $X_1, X_2, X_3, X_4$  and  $X_5$  is given by (1):

$$y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon \tag{1}$$

where:

$y$  is the academic performance

$\beta_0, \beta_1, \beta_2, \beta_3, \beta_4$  and  $\beta_5$  are the regression parameter or regression coefficient

- $X_1$  : Family Members
- $X_2$  : Peer Influence
- $X_3$  : Financial Management
- $X_4$  : Study Environment
- $X_5$  : Online Teaching
- $\varepsilon$  : random error

A p-value of less than 0.05 in the regression analysis indicates a significant influence of the factors identified in this study on the Students' Academic Performance through ODL. Prior to multiple regression analysis, statistical assumptions such as linearity, homoscedasticity, independence of errors, normality of error, and independence of independent variables (no multicollinearity) were met.

#### 4. Result and Analysis

This research was conducted to explore the most significant factor(s) that affects the academic performance during ODL among UiTM Seremban 3 students. Multiple linear regression is used to determine the significant factors consisting of family members, peer influence, financial management, study environment and online teaching that affects academic performance (CGPA).

Table 3 shows that p-value (0.034) is lower than the significant value ( $\alpha = 0.05$ ). Thus, indicating the model is significant. Table 4 are consisted of the values of R, R<sup>2</sup> and Durbin-Watson for the model. Since the value of R<sup>2</sup> is 0.035, it indicates that 3.5% of the total variation in CGPA is explained by the factors affecting students' academic performance through ODL among UiTM Seremban students, while 96.5% is explained on other factors.

Table 3: ANOVA Results

Source of Variation	Sum of Square	df	Mean Square	F	Sig.
Regression	1.592	5	0.318	2.437	0.034
Residual	44.047	337	0.131		
Total	45.640	342			

Table 4: Model Summary

R	R <sup>2</sup>	Durbin-Watson
0.187	0.035	1.844

Table 5 shows the results of analysis by using all parameters included in the model which are family members, peer influence, financial management, study environment and online teaching as the independent variables while the dependent variable is the academic performance (CGPA) of students in UiTM Seremban 3. It is shown that there is only one significant variable which is family members (p-value = 0.027). In addition, the value of unstandardized coefficient for family members is (0.003) indicating that every one unit in total score of family members increases, the academic performance (CGPA) of UiTM Seremban 3 students increases by 0.003. This finding can be supported by research conducted by Tus (2021) where parental participation is a significant predictor of students' academic achievement, especially during this crucial time. Involvement and support from parents play a huge role in improving the students' academic performance. Therefore, it benefits the students when parents acknowledge and understand their study circumference in this pandemic. Furthermore, according to Gao et al. (2021), a happy and healthy home atmosphere can boost student academic engagement especially during this pandemic. Furthermore, a study carried out by Frawley et al. (2019), family support may influence their children's emotional experiences with learning. Therefore, this evidence supports the significance of family members affecting academic performance during this pandemic.



Table 5: Coefficients results

Model	Unstandardized coefficient		t	Sig.	Collinearity Statistics		Remarks (Hypothesis supported or not)
	B	Std error			Tolerance	VIF	
(Constant)	3.223	0.138	23.385	0.000			
Family Members	0.003	0.001	2.216	0.027	0.671	1.490	Supported
Peer Influence	0.001	0.002	0.485	0.628	0.661	1.513	Not Supported
Financial Management	-0.006	0.004	-1.537	0.125	0.954	1.048	Not Supported
Study Environment	0.000	0.001	0.123	0.902	0.597	1.676	Not Supported
Online Teaching	-0.003	0.003	-0.827	0.409	0.720	1.388	Not Supported

### 5. Conclusion

Multiple Linear Regression is used in determining the most significant factor affecting academic performance through ODL. Online questionnaires were distributed to 360 samples in three different faculties. The factors that contribute to the success of the academic performance of students are explained by 3.5% of the factors identified in this study. The model with all variables has fulfilled all the assumptions after running the test. The results obtained showed that there is only one variable that is significant which is family members (p-value=0.027). This study proves that the support and guidance of the parents to the students play a vital role in the success of the students. It is hoped that this study can be beneficial and raise awareness to many people including family members, lecturers, counsellors, university administration and government. The academic accomplishment of students is more certain when all stakeholders fulfil their respective responsibilities.

The future researcher can add more factors such as internet connection, intimate relationships, self-motivation, health issues and study course of study. By adding more factors, the respondents have more options of which are affecting their academic performance through ODL. Moreover, to reach a reliable result, a method of data analysis that is simultaneous and integrated is necessary. Structural Equation Modelling (SEM) is a multivariate analysis which can be applied in multi-variable and multi-relations data at the same time and is ready to test complicated relations between factors.

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