

## Factors Affecting Academic Performance of Business Management Students in Malaysia and Indonesia during COVID-19

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*Abstract:* - Due to the widespread COVID-19, many educational institutions were closed, and students were advised to stay at home with only brief personal excursions outside. Globally, the closure of educational institutions around the world has recorded US \$ 10 trillion (RM41 trillion) of lost revenue in just four months of closure. For higher education institutions, the approach of distance education or Open and Distance Learning (ODL) is seen as very significant in current higher education. However, the change from face-to-face classes to virtual classes and the cancellation and replacement of assessments have affected students' academic performance. To address the significance of online teaching in such emergency cases, the present study aimed to investigate the effects of COVID-19 on the academic performance of Malaysian and Indonesian students. The quantitative data were collected from 700 undergraduate business students through an online survey. Structural equation modelling was used to analyse the collected quantitative data. The study found that both teaching methods and self-motivation have a positive relationship with students' academic performance in Malaysia and Indonesia, while course assessment has a positive relationship with students' academic performance in Malaysia. Lastly, class attendance did not influence students' academic performance in both countries of Malaysia and Indonesia.

*Key-Words:* - Academic performance; Business Management students; COVID-19; Indonesia; Malaysia

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## 1 Introduction

Many educational institutions were closed due to the widespread COVID-19, and students were encouraged to stay inside and go outside only for brief personal trips. Over 1.6 billion kids and 63 million teachers worldwide were affected, and 191 nations saw widespread school cancellations as a result. The Higher Education Commission directed universities to make significant alterations and drastically changed the teaching activities and methods for lectures and laboratory sessions in response to the request to continue teaching during the 2020 shutdown, [1]. Parents remained to be wary of direct interaction (F2F) between teachers and children as well as between students even after the lockout was ultimately lifted due to the decrease in incidents.

On the bright side, this pandemic has created chances for a lot of people in many different professions, including instructors and students. Researchers and teachers from across the world have noted that online education promotes collaboration between instructors and students as well as helps students' learning. It encourages learning self-regulation and offers flexibility in terms of time and location, [2]. The traditional method of teaching has still undoubtedly been used today, but with the development of technology and the unexpected COVID-19 pandemic, institutions' reliance on digital technology has grown, [3]. The pandemic crisis generally can be overcome with the help of online learning, [4]. According to, [5], the global pandemic has given the country the chance to alter its current educational practices and refocus on employing technology. However, online education has been called a predicament in education by many. The majority of students lack enthusiasm for online education owing to the few interactions, unsteady sound, and poor clarity of the image due to reliance on the reliability of the Internet and technological equipment not meeting the demand.

Additionally, earlier research on COVID-19 and online education has produced mixed outcomes. Studies have found positive results for a number of topics, including students' satisfaction, understanding, effectiveness, flexibility, and adaptability, [6], [7], [8]. Similarly, research conducted in Indonesia highlighted the problems with students' level of understanding and satisfaction, [9], [10]. The study, [11], found that

41% of Indonesian students admit they have poor (35%) and no understanding (6%) of the subjects delivered during online learning. Meanwhile, a mixed-methods study was used by, [12], to examine the perceptions of Malaysian high school students towards online learning. The author claimed that students are not prepared to use the internet, according to the quantitative data. Several new issues regarding students' unhappiness with the online learning environment emerged from the qualitative research.

Many variations exist when it comes to how the COVID-19 pandemic has affected academic performance. For instance, a study conducted by, [13], at the Universidad Autónoma de Madrid in Spain with 450 students from three topics in various levels of higher education found that confinement to COVID-19 has a sizable favorable impact on students' performance. According to the findings, students fared better on all types of examinations after solitary confinement started. When contrasting students' performance under confinement with their performance during earlier periods when activities were not restricted to distance learning, this study also reveals that there are substantial disparities. They are also unsure of whether the difference is the result of the new assessment procedure or the new learning methodology. In contrast, [14], revealed in their research that there are either no appreciable differences between face-to-face and online learning in terms of student academic achievement. These difficulties have prompted the authors' interest in researching, confirming that ODL during COVID-19 influences academic achievement, and identifying the criteria that were taken into account when evaluating academic performance.

Despite past research on the advantages and disadvantages of online learning, there is currently a dearth of studies that examine the determinants of academic success among students using open and distance learning (ODL) in Malaysia and Indonesia during the COVID-19 pandemic. Therefore, the purpose of this study is to investigate the Theory of Performance (ToP) variables (personal factors and fixed factors) that influence Business Management students' performance in the process of ODL during the COVID-19 pandemic between the two neighbouring countries of Malaysia and Indonesia. Specifically, the research constructs are self-motivation which is the personal factor, while

teaching method, class attendance, and course assessment are categorised as fixed factors. The present study aims to advance the current literature by examining whether the teaching method, class attendance, course assessment (fixed factors), and self-motivation (personal factors) of university students influence their academic performance. Furthermore, this research would contribute to an understanding of how these personal and fixed factors influence students' academic performance in both countries, Malaysia and Indonesia. Finally, the study can assist academic administrators in making a better education policy related to online learning and how it affects students' learning experiences. This study compares Malaysia and Indonesia, two neighboring countries, which was not previously covered in the literature.

### 1.1 Problem Statement

According to a report released by the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations Children's Fund (UNICEF), and the World Bank, the impact of COVID-19 affected the education sector in more than 150 countries between May and last October. The report also mentioned that the crisis will have a severe impact on children's education, especially in poor countries. They argue that such negative effects will be lasting on their education.

Globally, the closure of educational institutions around the world has recorded US \$ 10 trillion (RM41 trillion) of lost revenue in just four months of closure. It shows that these closures not only have an impact on individuals but also have a significant impact on national income because prolonged school closures also cause students and the country to lose large amounts of money throughout their lives. This illustrates how severe the impact of school closures is, and even explains some of the steps taken by the government in formulating policies to make up for lost school days.

In Malaysia, online mediums, television, home teaching materials, and education using radio are among those that have a place among educators and students. This difference occurs because Internet access differs according to the ability of a student. Therefore, any decision to consider online learning as an official school day needs to consider the inequality of access to technology among the entire population in Malaysia, especially the rural population who have difficulty having Internet access and current technological disabilities.

The majority of low-income or rural-dwelling pupils are the main group excluded from online

learning when schools are closed. Virtual learning covers all subjects and development domains, whether the primary or secondary school can be implemented online, yet teaching subjects such as sports and art online is very challenging.

In Indonesia, the situation is almost the same. All learning processes, examinations, and even graduations are conducted online. Teachers and staff work from home every day and do not come to school except for an urgent need, and this process takes place on a scale that has never been tested and measured before. Schools are required to be able to provide minimum standard services to their stakeholders in the middle of work-from-home (WFH) and large-scale social restrictions or Pembatasan Sosial Berskala Besar (PSBB) to reduce virus transmissions, [15].

For higher education institutions, the approach of distance education or ODL is seen as very significant in current higher education. It does not provide a significant impact because higher education students are considered mature and proficient in conducting education online or virtually. Most national institutions of higher learning still maintain WFH instruction to lecturers and continue virtual education to students. This is done to curb and reduce the number of staff on campus. Throughout the implementation of WFH to academic staff, it was seen not to affect academic activities between students and lecturers. The implementation of teaching and assessment is continued and modified according to the needs of WFH. Some assessments need to be canceled and replaced with assessments that are more relevant to the current situation of COVID-19.

However, the transition from in-person to online learning as well as the removal and replacement of examinations have had an impact on students' academic achievement. For instance, a study conducted by, [16], discovered that a number of elements, including worry (60.3%), social issues (41.8%), and internet access have a negative impact on both students' and teachers' motivation (43.2%). However, the use of e-learning platforms is rated favourably by teachers (488.8%) and students (65.0%). Additionally, a study by, [17], found that COVID-19 has a detrimental impact on Afghan students' academic achievement and that the students were extremely unsatisfied with online instruction at this crucial time.

Therefore, one of COVID-19's impacted outcomes would be students' academic performance as they make their first foray into online learning. This outcome is significant enough to be examined. The current study sought to examine the impact of

COVID-19 on the academic performance of Malaysian and Indonesian students at the Faculty of Business and Management, UiTM Kelantan, Malaysia, and the Faculty of Economics and Business, Universitas Swadaya Gunung Jati Cirebon, Indonesia, during the COVID-19 outbreak in order to address the significance of online teaching in such emergency cases. This survey also identifies the notable variations in students' academic achievement across the nation. Additionally, the connection between student academic performance and test scores is looked at.

## 2 Literature Review

The establishment of various higher learning institutions in Malaysia such as Universiti Teknologi MARA (UiTM) by the Malaysian government has been a very commendable move. Academic success among students is essential in developing graduates of high caliber who will serve as outstanding leaders and labour for industries, [18]. Academic achievement has long been the yardstick for determining if a school has produced high-quality graduates who can meet industrial standards, as well as outstanding leaders and a source of future exceptional personnel for the country. The university students who graduate from Malaysia's universities are the country's major source of manpower. Despite this, graduates still found it difficult to get a job due to many reasons, including lack of academic excellence, [19]. Department of Statistics Malaysia Official Portal year 2021 reported that the number of unemployed graduates in 2019 was 170.3 thousand, an increase of 5.5 percent (2018: 161.3 thousand) and it is expected to continue to increase in 2023 due to the COVID-19 pandemic. Therefore, academic performance issues should not only be addressed by universities but also by governments, corporations, and authorities. The issue of academic performance is a crucial one that requires dedication from all parties, regardless of their differing political interests and intentions.

Two important academic performance indicators at UiTM are challenging to meet: the percentage of students who graduate on time and the percentage of failures in any course, which should not be higher than 25%. According to the academic performance results for the year 2018, 15.39% of diploma students at the UiTM Kelantan branch did not graduate on time (GOT), and the percentage of diploma students who failed a course was also high (more than 25%). In order to achieve the university's

key performance index, it is crucial to look into the variables that can affect academic success.

In earlier studies, the key subject of interest was university student performance. Numerous scholars have expressed an interest in knowing more about the variables that affect students' academic success in institutions of higher education. Numerous studies have attempted to prove a direct causal connection between numerous elements and undergraduate students' performance. Although there is a growing corpus of research on students' academic success, there is still a wide range of evidence regarding how each of these variables may impact academic performance at Malaysian higher education institutions. This is because research has already been conducted on the connections between various variables and academic achievement which produced contradictory results.

As a result, it has not been thoroughly examined how certain elements may affect students' performance, particularly from the perspective of students at Malaysian universities. The purpose of this study is to examine how well diploma students from the faculties of Business and Management at the University Teknologi MARA Cawangan Kelantan (UiTMCK) in Malaysia and of Economics and Business at the Universitas Swadaya Gunung Jati (UGJ) Cirebon perform academically. Additionally, this study focused on UiTMCK in Malaysia and UGJ in Indonesia to better understand how certain elements, including teaching style, participation in class, course evaluations and self-motivation affect students' academic success. The results of this study will help graduates in Malaysia pay closer attention to their learning environment and how it could influence their academic performance in colleges, as well as contribute to improving educational outcomes in Malaysia and Indonesia.

### 2.1 Academic Performance

Numerous research has been carried out in Malaysia to determine the factors that affect academic success in universities because it was recognised that improved academic performance would increase employment. Successful students will have extra time to search for employment. For a university to achieve positive results that translate into greater future job performance, academic excellence is essential. The ability of graduates with degree-level education to find jobs is viewed as a key component of evaluating the performance of a higher education institution, [20]. Meanwhile, [21], asserts that the evaluation of academic success should be done in light of the established goals, which are typically

expressed in terms of the grade received on the exam, such as the Grade Point Average (GPA). Many colleges throughout the world use the GPA system as a measure of academic accomplishment in the interim, [22], [23], [24]. GPA is frequently used as a stand-in for ability and past academic success. For instance, researchers looked at data from the US to find proof that GPA is a good indicator of academic ability. As a result, university administrators, professors, and students need to identify and improve aspects that could reduce obstacles to reaching and sustaining the required GPA, [25].

Additionally, a student's capacity to develop the necessary skills and knowledge that a potential employer expects as well as meet public expectations is a sign of their academic achievement, [26]. The student is able to expand on the knowledge already in existence and make choices regarding how to approach challenging concepts. Due to the significant impact, it has on students, professors, and university policymakers, academic success is crucial, [27]. To ensure that the teaching-learning process has a strong, beneficial impact on all aspects of learning, consistency in student academic achievement is crucial in the educational system. Academic success is influenced by a number of variables, including gender, prior knowledge, learning, and teaching style, [28]. There has not been a single study that specifically focuses on how teaching strategies, class participation, course evaluation, and self-motivation affect students' academic achievement at Malaysian universities. This study fills this gap by examining how these characteristics affect university students' academic performance.

A performer can be an individual or a group of people working together in a collaborative effort, in accordance with the Theory of Performance (ToP). According to this idea, performance may be broken down into six different elements: context, knowledge and skill levels, identity levels, level of skill, personal factors, and fixed factors, [29]. Thus, the researchers solely considered personal and fixed factors when applying the theory to the area of interest, which is academic success. To be more precise, fixed elements such as teaching strategies, student participation, and course evaluation are discovered, whilst personal factors such as self-motivation are recognised.

## **2.2 Factors Influencing Academic Performance**

In, [30], the study conducted a study on the academic performance of Nigerian students and

found that factors like academic assessment, the parent or student family background, and teaching strategies have a greater impact on students' academic performance than the conductivity of the school and overall academic environment. Peers and instructional strategies have also been found to significantly affect students' academic performance, [31]. Meanwhile, [32], looked at course evaluation in their research on student performance. Additionally, the researchers' novel contribution is the inclusion of self-motivation and participation in classes. The examination of independent variables, however, would be pertinent to the current conditions faced by all higher educational institutions using the ODL technique and WFH as a result of the COVID-19 and MCO pandemics. Everyone is aware that all higher education institutions are compelled to change certain of their teaching strategies and evaluation procedures to comply with these limitations. Undoubtedly, the need to become familiar with new standards for the teaching and learning process is hurting both academics and students.

### **2.1.1 Teaching Method**

Teaching strategies must be employed to help students comprehend important ideas, [33], [34]. The kind of principle and the instructional methods employed are the greatest ways to define the teaching methodology. Depending on the knowledge or skill the educator is trying to impart, several teaching methods exist. Different nations may employ various teaching methods depending on the knowledge or skills being imparted, [33], [35]. Every student is given an equal chance to study by utilising a range of techniques and strategies. If the teaching strategy does not support the students' understanding, they will perform worse than the other pupils. Since it has a substantial impact on students' academic success, teachers' teaching abilities are important, [36].

In, [37], the study asserts that a teacher must exhibit professionalism in all facets of their instruction, particularly during the teaching and learning process. The academic performance of students may be impacted by teachers who demonstrate their competence in this field in a way that improves their learning and development. According to, [38], inexperienced or uninterested teachers are unable to ensure that students fully comprehend a subject because a teacher's capacity to present the material, foster student engagement, and inspire students to complete assignments results in a student's acquisition of a thorough understanding of the subject. As a result, the

teacher's expertise immediately establishes a positive environment in the classroom with excellent organisation and properly thought-out teaching frameworks. According to, [39], nearly every paper they analysed identified teaching style as an important variable that influences academic success.

However, the COVID-19 pandemic has caused a significant change in the way that lessons are taught; as a result, teaching and learning are now conducted entirely online, or ODL. This might occur in an effort to stop the virus's transmission. Everyone is aware that one of the Standard Operation Procedures (SOP) for combating this particular virus is to maintain a social distance of at least one (1) meter. The best option for moving forward with teaching and learning without interruption is ODL.

Due to the pressing necessity to use ODL in the teaching and learning process, both teachers and students suffer stress. This assertion is supported by a study by, [40], that indicated that during the COVID-19 outbreak, undergraduate nursing students found online learning challenging. Stress has a significant negative impact on first-year nursing students' happiness and academic performance. This study suggests that during the COVID-19 outbreak, particular steps should be implemented to reduce stress and improve online teaching and learning.

Additionally, the COVID-19 pandemic and the quarantine period revealed that university students (human resources) in Mexico switched to the online learning format, which required them to acclimatise to new technologies and environments that were dissimilar from the ones found in their university's classrooms. In particular, these unfamiliar surroundings may make the student feel uneasy and may affect their academic performance, [41]. Thus, the authors suggest that *H1: The teaching method is positively significant with academic performance.*

### 2.1.2 Class Attendance

Over the past ten years, debates concerning the importance of class attendance in higher education institutions have gotten more intense. While some colleges and universities do not have policies mandating students to be in class, many do. Despite the many policies, teachers in higher education think that attendance has a big impact on academic success, [42].

In any educational setting, a student's participation in class and prior academic success has a big impact on academic performance and accomplishments. Studies have shown that absence

causes a significant issue in higher education. These study habits affect how people learn, their sense of accountability, and their motivation to put in a lot of effort. These behavioural characteristics have an impact throughout time and often persist in a person's character after completing their education, [43]. In a similar vein, poor academic performance can be impacted by low attendance rates and a high number of unapproved absences, [44]. These are essential for the future of any nation where the advancement of knowledge among youth is significant, [45]. Researchers, [46], [47], observed a positive and statistically significant interrelation between attendance and academic performance.

However, the COVID-19 epidemic altered the teaching approach, which also resulted in online instruction and attendance. For lecturers and students to utilise it as a tool for attending lessons, the management developed platforms. For instance, in UiTM, the uFuture platform was carefully designed to track student's attendance. The lecturer can use this type of platform to check attendance each month. But there is still a question of how to guarantee that each student shows up for class. According to a study conducted at Harvard School among dental medicine students, switching to e-learning has damaged their academic performance by raising stress levels, lowering engagement, and maintaining perceived attendance levels, [48]. This is in line with a study done by, [49], which indicated that the student's attendance to virtual classes, class engagement, and anxiety level influences students' preference for virtual learning. Thus, the authors propose that *H2: Class attendance is positively significant with academic performance.*

### 2.1.3 Course Assessment

According to, [50], assessment is a key component in assessing a student's academic performance in higher education since the advancement of students in higher education rests largely on evaluation, which has been the core of higher education. Assessments are important in higher education because they can affect students' attitudes and behaviours toward learning.

It is a usual practise to use the course assessment to determine academic performance. The selection and use of assessment techniques, however, call for careful thought. The group evaluation format, according to, [51], enables pupils to successfully demonstrate their knowledge. Assessment of academic procedures employed during the delivery of a course is one of the essential elements in determining academic performance.

One of the most important components of evaluating academic achievement is the assessment of academic practices used throughout the delivery of a course. By using the course evaluation as a helpful indicator, the lecturers can improve the caliber of their instruction and academic practices. For evaluating student performance in academic courses, it is essential to choose the appropriate assessment kinds, assessment methodologies, and assessment activities. While assessing student academic achievement in a course, it is essential to follow the assessment method, activities, and assessment categories specified in the course description.

In, [52], the author predicts that if students' course assessments are made to suit their expectations, they would do better on exams. Course evaluations are one factor that may have an impact on student performance through satisfaction. It is essential to find out what students think about a course evaluation in order to ascertain the consequences of students' academic experience and performance, [53]. According to the studies of, [54], [55], course assessment is the most important predictor and a key element for increasing students' happiness.

The COVID-19 pandemic, however, has prompted revisions to all of the evaluations and grade points. For instance, prior to the pandemic, the fundamental evaluations included group projects, group presentations, tests, and quizzes, all of which are physically administered. However, due to the pandemic, all of these evaluations must be done online. Written assignments, presentations, quizzes, and final exams are now done online. The description of the course objectives and program objectives also affects the grading marks. Actually, early online education was heavily reliant on teachers, who were essential to the learning process, [56]. One of the main advantages of switching from traditional teaching to online learning, where the teacher serves mostly as a facilitator, is that online evaluation enables the students to display their ability in critical thinking and problem-solving, [57]. Thus, the authors propose that *H3: Course assessment is positively significant with academic performance.*

#### 2.1.4 Self-Motivation

Extrinsic and intrinsic motivation can be categorised into two categories. Extrinsic motivation typically refers to external factors or values that motivate someone to take action or learn something. According to, [58], academic achievement is highly connected with both students' internal and extrinsic

motives. According to the study, students who are motivated internally are more committed to their studies and are happier with their education than students who are motivated externally, who seem to be more focused on earning prizes, getting better grades, and being accepted by their classmates.

This conclusion is corroborated by, [57], who found that pupils are more organically motivated for their academic performance than extrinsically motivated. A person may exhibit a range of profiles depending on these motivational traits and may have these sorts of motivation at various levels simultaneously, [60]. The results are consistent with the findings of research by, [61], that emphasizes the importance of self-directed learning towards academic success. A motivated student will work hard to get good marks and develop an effective learning method.

The findings show that a student's academic success is significantly influenced by their academic drive and interest. Researchers have focused a lot of attention on determining what motivates students' academic interest since, [62], has emphasised that it is a critical predictor of academic performance. According to, [63], students who are extremely driven and enthusiastic in their studies will gain from their education, have confidence in their ability to learn, and take responsibility for their education. This backs a study by, [64], that found college success is more likely to be achieved by students who are motivated and interested in their studies. In, [65], [66], have identified that variables such as motivation influence the skills and academic performance of university students.

The impact of the coronavirus outbreak has pushed for online learning at higher education institutions which has been the subject of different reports. The consequences of stay-at-home orders on students were examined in, [67]. The results showed that students' motivation diminishes and they thought online education is less gratifying than campus-based education. Lower motivation causes the effort to diminish, as expected. Additionally, it is a fact that orders to stay at home resulted in fewer credits being earned which is linked to a reduction in motivation, [67]. In studies, [68], [69], [70], the authors discovered that for students who lack motivation, external factors such as the learning environment, learning time, and instrumental supports have a substantial impact, which in turn affects accomplishment. Thus, the authors propose that *H4: Self-motivation is positively significant with academic performance.*

### 3 Research Methodology

This study is quantitative in nature and a cross-sectional research design was employed. Self-administered questionnaires using Google Forms were used in data collection. The unit of analysis for this study is individual, which consists of public university students in Malaysia and Indonesia. So, the sample of this study is public university students that have experienced online learning during COVID-19 at their respective universities. Students are the individuals who are aware of their academic success while taking into account knowledge of the issue of interest. The students are therefore the sampling units of this investigation. The sample size is 700 based on the combined enrollment of the faculties of Business and Management (UiTMCK) and Economics and Business (UGJ). A series of questions with the following three elements of demographics, independent variables, and dependent variables are modified from various sources. All respondents are given the following information using Google Forms. There are 56 questions in all. The questions are graded using a Likert scale of five-point rating scale. In this study, the association between variables and academic performance is investigated using the Statistical Package for Social Science (SPSS) and the Structural Equation Modeling-Partial Least Squares algorithm (SEM-PLS) analysis method utilising SmartPLS 3.2.1. The researchers used SPSS to evaluate the demographic data, and SEM-PLS to analyse the data by measuring and evaluating structural models. A spreadsheet connected to the online Google Form questionnaire would be used for data gathering. Data gathering is anticipated to take place between January and February 2022 (1 month).

#### 3.1 Questionnaire Design

An anonymous online survey was created, and a preliminary test with 30 participants was conducted to make sure the draught survey was clear. At the outset of the questionnaire, the purpose and intended applications of the data were briefly described. On numerous social media channels, links to an online google form questionnaire were distributed to various business studies groups (Facebook groups and WhatsApp groups). Students of business studies were asked to complete the questionnaire in order to conduct the research. In order to spread the questionnaire to as many participants as possible, participants were also invited to share the link with their business studies peers. The final questionnaire for this study has 56 items, which were divided into

the following three (3) sections: Five (5) questions about the participants' demographics were included in the first section (gender, program level, program name, current semester, and CGPA). Another 37 questions made up the second segment, which investigated the factors that impacted academic performance utilising ODL during the COVID-19 epidemic. Finally, there are seven (7) questions in the third segment that assess academic performance.

#### 3.2 Data Collection and Analysis

A total of 700 participants were determined to be the bare minimum for the sample size. A spreadsheet connected to the online Google Form questionnaire would be used for data gathering. Data gathering took place between January and February 2022 (1 month). Data were exported, and SPSS version 28.0 was used to analyse them (IBM Corporation). To summarise the gathered data, descriptive statistics were displayed as counts and percentages. The researcher used SEM-PLS to investigate the factors that affect academic performance among students using ODL in both Malaysia and Indonesia, to ascertain the relationships between these factors and academic performance among students using ODL in both Malaysia and Indonesia and to look at the variations in students' academic performance across the nation.

The students were asked to complete the questionnaire within one week and this process was facilitated by their respective lecturers. This method was believed to produce higher response rates. The data was collected and coded before loading into SPSS to see if errors occurred and to ensure that the scores are not missing or out of range. Then, SmartPLS 4.0 was utilised to test the hypotheses of the study.

## 4 Result

#### 4.1 Profile of Respondent

The target sample size was 700, however, the actual sample collected was 873 respondents from both countries, Malaysia and Indonesia. The demographic profile of the study's respondents was classified into five (5) categories based on the analysis with SPSS. The analysis included gender, program level, program name, current semester, and CGPA. The analysis shows that from 484 responses (Malaysia) and 425 responses (Indonesia), the majority of them were female with 362 respondents (80.8 percent) from Malaysia and 301 respondents (70.8 percent) from Indonesia. The respondents



from Malaysia were almost equally from both Degree and Diploma courses, but from Indonesia, almost 100 percent were Degree students. Meanwhile, most of the respondents from Malaysia were Business Studies students while from Indonesia, they were from Bachelor in Management. Currently, all the respondents came from various semesters and most of them could be categorized as excellent students since their CGPA was 3.0 and above.

## 4.2 Measurement Model Evaluation

The measurement model was analyzed using SEM-PLS, [71]. The measurement model includes an evaluation of the constructs' quality, including their validity and reliability. Both covering average extracted variance (AVE), discriminant validity, Cronbach's alpha, composite reliability, and heterotrait-monotrait (HTMT) as described by, [72], were assessed. The reporting measurement model, however, begins with a determination of the factor loading.

### 4.2.1 Internal Consistency Reliability

The first standard to be established in the measurement model is internal consistency reliability, which includes Cronbach's Alpha and composite reliability. The composite reliability ratings should be greater than 0.70 to illustrate the modest dependability relevant to the investigation, [73].

Table 1. Internal consistency reliability for Malaysia and Indonesia

Construct	Composite Reliability (>0.70)		Cronbach's Alpha ( $\alpha$ ) (>0.60)	
	Malaysia	Indonesia	Malaysia	Indonesia
Teaching Method	0.921	0.892	0.901	0.839
Class Attendance	0.943	0.849	0.931	0.766
Course Assessment	0.933	0.832	0.917	0.731
Self-Motivation	0.913	0.858	0.890	0.779
Academic Performance	0.885	0.823	0.827	0.788

Table 1 reports the SEM-PLS analysis that shows the composite reliability and Cronbach's Alpha values for teaching method, class attendance, course assessment, self-motivation, and academic performance respectively. From the table, the composite reliability value for the teaching method was 0.921 (Malaysia) and 0.892 (Indonesia), class attendance was 0.943 (Malaysia) and 0.849 (Indonesia), course assessment was 0.933 (Malaysia) and 0.832 (Indonesia), self-motivation was 0.913 (Malaysia) and 0.858 (Indonesia), and academic performance was 0.885 (Malaysia) and 0.823 (Indonesia). All of the constructions demonstrated high composite reliability, with strong and good scores falling between 0.70 and 0.90, [74].

The Cronbach's alpha values for the constructs were strong with teaching method reported as 0.901 (Malaysia) and 0.839 (Indonesia), class attendance as 0.931 (Malaysia) and 0.766 (Indonesia), course assessment as 0.917 (Malaysia) and 0.731 (Indonesia), self-motivation as 0.890 (Malaysia) and 0.779 (Indonesia), and academic performance as 0.827 (Malaysia) and 0.788 (Indonesia). All of these values were significantly higher than the lowest acceptable internal consistency level of 0.60, [74]. The Cronbach's alpha values were above 0.60, indicating acceptable reliability, and the composite reliability for all the constructs was more than 0.70.

### 4.2.2 Convergent Validity

The convergent validity of the measurement model is frequently assessed using the loadings, average variance extracted (AVE), and composite reliability, [75]. According to, [76], the authors used factor loading values greater than 0.70 except for BA3 (0.348), BA4 (0.322), BA5 (0.369), and BA15 (0.631). Since the loadings were all greater than 0.7, it proved that every item was accepted. The composite reliability and AVE are additional variables taken into account while determining convergence validity in addition to the loading values. The composite reliability ratings in Table 2 demonstrate how effective the construct indicators were since the latent construct ranged from 0.885 to 0.943 (Malaysia) and 0.823 to 0.892 (Indonesia), which was higher than the recommended value of 0.70, [76]. The construct's AVE should be greater than 0.50 because it is believed to account for more than half of the variance. Meanwhile, AVE values below 0.50 suggested that the construct has not yet fully explained all of the errors in the items. The measurement model is therefore implied to be convergently valid by all of the AVE values at the construct level in Table 2. The AVE ranged from 0.601 to 0.674 (Malaysia) and 0.553 to 0.700 (Indonesia).

Table 2. Convergent validity of measurement model

Construct	Loading range (>0.70)		Composite Reliability (>0.70)		AVE (>0.50)	
	Msia	Indo	Msia	Indo	Msia	Indo
Teaching Method	0.732 – 0.867	0.744 – 0.865	0.921	0.892	0.627	0.675
Class Attendance	0.752 – 0.885	0.735 – 0.810	0.943	0.849	0.674	0.585
Course Assessment	0.748 – 0.850	0.731 – 0.765	0.933	0.832	0.667	0.553
Self-Motivation	0.708 – 0.819	0.724 – 0.836	0.913	0.858	0.601	0.602
Academic Performance	0.749 – 0.858	0.759 – 0.908	0.885	0.823	0.659	0.700

### 4.2.3 Discriminant Validity

Common techniques for evaluating discriminant validity include cross-loadings, the Heterotrait-Monotrait (HTMT) Ratio, and the Fornell-Larcker, [77], criterion, which compares the correlations between constructs and the square root of the AVE for that construct. When an item's loading on a construct exceeds all of its cross-loading with other constructs, discriminant validity is evaluated using this method. The results demonstrate that the first teaching method construct was made up of eleven (11) components, all of which had significant loadings in this construct. Eight (8) things were found to have considerable loadings for class attendance, while seven (7) items were found to have significant loadings for course assessment. In addition, there were seven (7) elements in the self-motivation category that had large loadings. Furthermore, seven (7) of the academic performance variables were discovered to have substantial loadings. All of the cross-loading values of the items are shown in Table 3a and Table 3b.

Table 3a. Loadings and cross-loading of each item (Malaysia)

	Academic Performance	Class Attendance	Course Assessment	Self-Motivation	Teaching Method
C1 – C7	0.749 – 0.858	0.153 – 0.259	0.236 – 0.332	0.222 – 0.298	0.131 – 0.268
BD1 – BD8	0.137 – 0.261	0.752 – 0.885	0.493 – 0.617	0.467 – 0.560	0.394 – 0.506
BE1 – BE7	0.222 – 0.336	0.499 – 0.601	0.748 – 0.850	0.493 – 0.562	0.477 – 0.536
BG1 – BG7	0.209 – 0.332	0.397 – 0.555	0.424 – 0.552	0.708 – 0.819	0.348 – 0.555
BA1 – BA14	0.176 – 0.295	0.375 – 0.471	0.438 – 0.563	0.380 – 0.514	0.732 – 0.867

Table 3b. Loadings and cross-loading of each item (Indonesia)

	Academic Performance	Class Attendance	Course Assessment	Self-Motivation	Teaching Method
C1 – C7	0.759 – 0.908	0.153 – 0.259	0.236 – 0.332	0.222 – 0.298	0.131 – 0.268
BD1 – BD8	0.086 – 0.127	0.735 – 0.810	0.230 – 0.251	0.185 – 0.235	0.164 – 0.289
BE1 – BE7	0.237 – 0.283	0.178 – 0.284	0.731 – 0.762	0.344 – 0.452	0.233 – 0.387
BG1 – BG7	0.368 – 0.480	0.159 – 0.287	0.302 – 0.475	0.724 – 0.836	0.263 – 0.350
BA1 – BA14	0.223 – 0.308	0.179 – 0.297	0.294 – 0.440	0.258 – 0.365	0.744 – 0.865

The Heterotrait-Monotrait (HTMT) ratio of correlations was proposed by, [72], as a rigorous approach to obtain discriminant validity. When using HTMT as a criterion, it is compared to a predetermined threshold. A result of 0.90, according to, [78], indicates a lack of discriminant validity. Table 4a and Table 4b demonstrates that discriminant validity has been established for this study.

Table 4a. Heterotrait– Monotrait (HTMT) for Malaysia

Constructs	1	2	3	4	5
1. Academic Performance					
2. Class Attendance	<b>0.272</b>				
3. Course Assessment	0.387	<b>0.753</b>			
4. Self-Motivation	0.371	0.673	<b>0.696</b>		
5. Teaching Method	0.314	0.614	0.685	<b>0.640</b>	

Table 4b. Heterotrait– Monotrait (HTMT) for Indonesia

Constructs	1	2	3	4	5
1. Academic Performance					
2. Class Attendance	<b>0.190</b>				
3. Course Assessment	0.505	<b>0.425</b>			
4. Self-Motivation	0.751	0.371	<b>0.715</b>		
5. Teaching Method	0.444	0.365	0.542	<b>0.459</b>	

The square root of the AVE values is compared to the correlations of latent variables using the Fornell-Larcker criterion. To apply this technique, any AVE construct's square root must be greater than its highest correlation with any other construct (Note: Table 5a and Table 5b).

Table 5a. Fornell-Larcker Criterion (Malaysia)

Constructs	1	2	3	4	5
1. Academic Performance	<b>0.812</b>				
2. Class Attendance	0.253	<b>0.821</b>			
3. Course Assessment	0.347	0.703	<b>0.817</b>		
4. Self-Motivation	0.329	0.622	0.636	<b>0.775</b>	
5. Teaching Method	0.282	0.556	0.626	0.582	<b>0.792</b>

Table 5b. Fornell-Larcker Criterion (Indonesia)

Constructs	1	2	3	4	5
1. Academic Performance					
2. Class Attendance	<b>0.190</b>				
3. Course Assessment	0.505	<b>0.425</b>			
4. Self-Motivation	0.751	0.371	<b>0.715</b>		
5. Teaching Method	0.444	0.365	0.542	<b>0.459</b>	<b>0.837</b>

Note: Diagonals (in bold) represent the average variance extracted while the other entries represent the squared correlation.

Table 5a and Table 5b displays the findings of the Fornell-Larcker criterion assessment along with the correlations between the factors in the lower left triangle and the square root of the AVE on the diagonal. Overall, for both Malaysia and Indonesia, the square roots of the AVEs for the constructs of academic performance, class attendance, course assessment, self-motivation, and teaching method were over 0.50. As a result, this study satisfies the requirements of the Fornell-Larcker criterion, HTMT ratio, and cross-loading method, demonstrating the discriminant validity of the constructs. In conclusion, it was determined that the research's measurements had both convergent and discriminant validity.

### 4.3 Structural Model Evaluation

The structural model includes a study of how the latent variables or constructs relate to one another. This comprises the collinearity assessment, path coefficient, coefficient of determination ( $R^2$ ), effect size ( $f^2$ ) and predictive relevance ( $Q^2$ ), and blindfolding, [73].

#### 4.3.1 Assessment of Collinearity among the Constructs

Examining potential collinearities between each set of constructs independently for each structural model subpart is the first stage in the structural model evaluation process. The values of the analyses on Variance Inflation Factors (VIF) are displayed in Table 6. All of the VIF outputs were evidently below the threshold of 5 as can be observed. Therefore, the structural model did not have a problem with construct collinearity. The author can therefore continue looking at the default report such as path coefficient,  $R^2$ ,  $f^2$ , and  $Q^2$ .

Table 6. Collinearity assessment of the constructs

Construct	VIF	
	Malaysia	Indonesia
Teaching Method	1.841	1.304
Class Attendance	2.234	1.163
Course Assessment	2.501	1.593
Self-Motivation	2.000	1.497

#### 4.3.2 Assessment of Path Coefficients

Path coefficients demonstrate how strongly the connections and hypotheses are supported by the data. Table 7 demonstrates that three out of four paths relationships for Malaysia were demonstrated to be significant, but two out of four paths relationships for Indonesia were significant. This is in accordance with the p-value ( $p < 0.05$ ). With  $\beta$  values of 0.171 (17%) for Malaysia, and 0.146 (15%) for Indonesia, there is a substantial correlation between teaching methodology and academic performance in both nations. The same is true for the connection between self-motivation and academic performance, with  $\beta$  values for Malaysia and Indonesia of 0.219 (22%) and 0.457 (46%) respectively. In order to explain the variation in the endogenous latent variable, namely academic performance, the exogenous constructs of teaching method and self-motivation significantly contributed. The relationship between course assessment and academic performance was also notable, with a  $\beta$  value of 0.358 (36%) for Malaysia alone. The association between academic performance and attendance in classes was not

significant for either Malaysia or Indonesia, as indicated by the  $p > 0.05$ . A bigger t-value denotes a stronger link, and the parameter's t-values indicate the strength of the association the parameter denotes. The bootstrapping approach with 5000 samples was used to obtain the t-values for each coefficient, [79], [80].

Table 7. Significant Testing Results of the Structural Model Path Coefficients

Structural Path	Path coefficient ( $\beta$ )		t-value		P-value	
	Malaysia	Indonesia	Malaysia	Indonesia	Malaysia	Indonesia
Teaching Method -> Academic Performance	0.171	0.146	2.530	3.237	0.012	0.001
Class Attendance -> Academic Performance	-0.093	-0.047	1.430	0.996	0.153	0.32
Course Assessment -> Academic Performance	0.358	0.056	4.808	1.128	0.000	0.26
Self-Motivation -> Academic Performance	0.219	0.457	3.523	9.22	0.000	0.000

\* 1.645 - 2.32      \*\* 2.33 and above      \*\*\*  $p < 0.01$

#### 4.3.3 Assessment of Coefficient of Determination ( $R^2$ )

The squared correlation between the actual and projected values of a particular endogenous component yields the  $R^2$  value, a metric of model prediction accuracy. There is no set rule that applies to the  $R^2$  value. The study, [81], provided threshold values of 0.67 (substantial), 0.33 (moderate), and 0.19 for calculating the  $R^2$  value (weak). Table 8 displays the  $R^2$  value for the endogenous construct that reaches the correct  $R^2$  value. Overall, a "substantial" portion of what, [81], proposes is explained by the model. For the research model of this research, the  $R^2$  values for the endogenous variable indicated that the proposed theoretical model explained 14% or 0.143 for Malaysia and 30% or 0.303 for Indonesia of the variance in academic performance, which is a satisfactory level of model predictability. Thus, this model is meaningful with weak and moderate predictive capacity for Malaysia and Indonesia respectively.

Table 8. Determination Coefficient ( $R^2$ )

Endogenous variable	$R^2$ value		Threshold	
	Malaysia	Indonesia	Malaysia	Indonesia
Academic Performance	0.143	0.303	$\geq 0.19$ (weak)	$\geq 0.33$ (moderate)

### 4.3.4 Assessment of Effect Size ( $f^2$ )

A metric for assessing the relative influence of an exogenous (predictor) construct on an endogenous (endogenous) construct is the effect size ( $f^2$ ), [73]. Following Cohen's criteria, [82], an  $f^2$  value of 0.02 is recognised as a minor effect, 0.15 is regarded as a medium effect, and 0.35 is viewed as a big effect in order to quantify the relative effect size of the exogenous construct on the endogenous construct. Table 9 displays the outcome. The exogenous constructs namely teaching method, class attendance, course assessment, and self-motivation explain the predictive value of an endogenous latent variable, namely academic performance with  $f^2$  effect sizes of 0.003, 0.002, 0.025, and 0.019 respectively for Malaysia. Meanwhile, the  $f^2$  effect sizes for Indonesia were 0.024, 0.003, 0.003, and 0.200 respectively. In summary, all four (4) constructs had a small effect size for Malaysia, while three (3) constructs had a small effect size and only one (1) construct had a medium effect size for Indonesia in producing the  $R^2$  of academic performance.

Table 9. Effect Size ( $f^2$ ) of the Latent Variable

Structural Path	Effect size ( $f^2$ )		Rating	
	Malaysia	Indonesia	Malaysia	Indonesia
Teaching Method -> Academic Performance	0.003	0.024	Small	Small
Class Attendance -> Academic Performance	0.002	0.003	Small	Small
Course Assessment -> Academic Performance	0.025	0.003	Small	Small
Self-Motivation -> Academic Performance	0.019	0.200	Small	Medium

Note: The values of  $f^2$ ; 0.02=small, 0.15=medium, 0.35=large

### 4.3.5 Assessment of Predictive Relevance ( $Q^2$ ) and Blindfolding

Based on the blindfolding method, the  $Q^2$  score in SEM-PLS is a predictive relevance metric, [73]. The path model is predictively significant for this construct when the  $Q^2$  score for a reflecting endogenous latent variable in the structural model is larger than zero. As shown in Table 10, the  $Q^2$  value was obtained by utilising the SmartPLS3.2.1 blinding process. The model is predictive of the reflecting endogenous latent variables since the  $Q^2$  value is much higher than zero.

Table 10. Predictive Relevance ( $Q^2$ ) of Endogenous (Omission distance=7)

Endogenous variable	$Q^2 > 0$	
	Malaysia	Indonesia
Academic Performance	0.085	0.184

### 4.3.6 Overall Results of Structural Model Analysis

Table 11a and Table 11b provides an overview findings of the hypothesis testing. Overall, just one (1) hypothesis was not supported for Malaysia, whereas three (3) hypotheses were accepted and supported at a significant value of  $p < 0.01$ . Conclusions can be drawn about the strong direct correlations between academic performance and teaching methods, course assessment, and self-motivation characteristics. In contrast, just two (2) of the four (4) hypotheses for Indonesia were substantiated. In conclusion, academic performance has a substantial and direct correlation with teaching methods and self-motivation constructs.

Table 11a. Results of the Structural Model Analysis (Hypotheses Testing) for Malaysia

Hypotheses	Relationship	Standard Beta	Standard Error	t-value	$f^2$	P-value	Decision
H1	Teaching Method -> Academic Performance	0.171	0.068	2.530	0.003	0.012	Supported
H2	Class Attendance -> Academic Performance	-0.093	0.065	1.430	0.002	0.153	Not Supported
H3	Course Assessment -> Academic Performance	0.358	0.074	4.808	0.025	0.000	Supported
H4	Self-Motivation -> Academic Performance	0.219	0.062	3.523	0.019	0.000	Supported

\* 1.645 - 2.32      \*\* 2.33 and above      \*\*\*  $p < 0.01$

Table 11b. Results of the Structural Model Analysis (Hypotheses Testing) for Indonesia

Hypotheses	Relationship	Standard Beta	Standard Error	t-value	$f^2$	P-value	Decision
H1	Teaching Method -> Academic Performance	0.146	0.045	3.237	0.024	0.001	Supported
H2	Class Attendance -> Academic Performance	-0.047	0.047	0.996	0.003	0.320	Not Supported
H3	Course Assessment -> Academic Performance	0.056	0.050	1.128	0.003	0.260	Not Supported
H4	Self-Motivation -> Academic Performance	0.457	0.050	9.220	0.200	0.000	Supported

\* 1.645 - 2.32      \*\* 2.33 and above      \*\*\*  $p < 0.01$

## 5 Discussion

COVID-19 has changed the whole world and integrated the education system through online or ODL methods. Concerning this, the current study demonstrates that teaching methods and self-motivation strongly predict academic performance in both countries. Teachers should always conduct themselves with professionalism, especially when it

comes to the teaching and learning process. Students' academic performance may be impacted by teachers who demonstrate their subject matter expertise in a way that improves their learning and development, [37]. The study, [38], concluded that students gain a thorough comprehension of a subject as a result of their teacher's ability to effectively communicate the material, foster student involvement, and encourage them to finish their assignments. As a result, the teacher's expertise immediately establishes a positive environment in the classroom with excellent organisation and properly thought-out teaching frameworks. The study, [39], came to the conclusion that practically all of the publications they analysed identified teaching methods as an important variable that influences academic success.

Meanwhile, according to, [58], academic achievement is highly connected with both students' intrinsic and extrinsic motives. According to the study, students who are motivated internally are more committed to their studies and are happier with their education than students who are motivated externally, who seem to be more focused on earning prizes, getting better grades, and being accepted by their classmates. According to, [59], kids are more intrinsically than extrinsically driven to perform well in school. A person may exhibit a range of profiles based on these motivational features and these sorts of motivation are found simultaneously at various levels, [60].

In addition, assessments are important in higher education because they can affect students' attitudes and behaviours toward learning. The selection and use of assessment techniques, however, call for careful thought. Assessment of academic practices employed during the delivery of a course is one of the essential elements in determining academic performance. By using the course evaluation as a helpful indicator, the lecturers can improve the caliber of their instruction and academic practices. It is critical to choose the appropriate assessment types, assessment techniques, and assessment activities when assessing a student's performance in academic courses. Students are expected to do better on exams if their course assessments are tailored to fit their expectations, according to, [52]. Course evaluation is one factor that may have an impact on student performance through satisfaction.

However, according to this present study, class attendance does not influence academic performance in Malaysia and Indonesia. While some colleges and universities do not have policies mandating students to be in class, many do. Despite the many restrictions, professors in higher education

think that attendance has a big impact on academic success, [42]. The importance of class attendance is underscored by the fact that students who regularly attend class have a greater probability of achieving their academic performance. According to them, a crucial factor in determining a student's achievement is attendance. In any educational setting, a student's participation in class and prior academic success has a big impact on their academic performance and accomplishments. Studies have shown that absence causes a significant issue in higher education. In a similar vein, poor academic performance can be caused by low attendance rates and a high number of unapproved absences, [44].

## 6 Conclusion

This study identified and investigated the factors that influence the academic performance of business management students in Malaysia and Indonesia during COVID-19 through the construction and testing of a model. The students at the center of this study are those whose perceptions of their academic performance are influenced by those factors mentioned earlier. The data were only obtained from Universiti Teknologi MARA (UiTM) Kelantan, Malaysia, and Universitas Swadaya Gunung Jati (UGJ) Cirebon, Indonesia during the pandemic COVID-19 crisis, which is the study's limitation. The study's results are therefore solely applicable to that time period. However, more study is recommended to be done to broaden the sampling across all sites in order to produce a better generalization. The researchers of this study also suggested that it be conducted on a range of campuses, including those of research universities and private universities abroad. Future research should include moderator or mediator variables to get a more thorough knowledge of academic success. Last but not least, a qualitative method should be used in future directions to produce more useful results. The focus of the current study was on academic performance during COVID-19 using the ODL method. In conclusion, no matter what the method of learning whether ODL or face-to-face, academic performance is particularly important for every student. As long as the students can learn from whatever platform, they should understand and finally adapt and adopt the new technology to the current situation.

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- Mazlina Mamat was responsible for formal analysis, methodology, and data validation.
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- Dedi Muhammad Siddiq was responsible for funding acquisition and project administration.
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The authors have no conflict of interest to declare.

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