

## **Assessment of Crisis Management in Higher Education Institutions Towards Academic Quality and Impacts on Students**

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### **Abstract**

In response to the Covid-19 pandemic, the Ministry of Higher Education in Malaysia issued various directives for higher education institutions (HEIs) to follow. These directives are mostly general and therefore lead to differences in Covid-19 crisis management plan. The importance of a well-designed and properly implemented crisis management plan is highlighted as it minimises disruption to service delivery, which affects academic quality and perception of students, especially regarding their motivation and experience as a student. This paper investigates how academic quality and students' perception are affected by the implementation of crisis management plans in HEIs. Using a structural equation modelling approach, data from students in various HEIs in Malaysia are analysed to explore the relationship between crisis management plan implementation and student constructs. Based on the findings of these analyses, this paper aims to contribute by providing a suggestion of possible improvement on the existing system on the design and implementation of a crisis management plan that is beneficial for students in the event of a crisis and enhancing the resilience and adaptability of the higher education system in the face of unforeseen challenges.

Keywords: Academic Quality, Crisis Management Plan, Higher Education Institutions

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## Introduction

The Covid-19 pandemic in Malaysia was a part of the worldwide pandemic of coronavirus disease started in 2019. Turgut (2021) stressed that the pandemic has revealed the biggest education crisis in human history. On 18<sup>th</sup> March 2020, the Movement Control Order (MCO) was implemented in Malaysia (Tang, 2022). One of the restrictions was to close all the higher education institutions (HEIs) nationwide. It affected thousands of students (Daim, 2020). HEIs have been forced to close their physical classes to the growing coronavirus outbreak, and switched classes to online classes (Ali et al., 2020). Daniel (2020) added that, Covid-19 disease has had a devastating effect on the educational activity that could have very harmful consequences for future generations.

The academic quality advocated in HEIs is to ensure that students have a good experience and learning opportunities and hence, HEIs should provide a conducive learning environment, promote effective teaching, enhance student support, and design appropriate assessment systems. In Malaysia, public and private HEIs have their own specific unit or department to uphold the academic quality. These units and departments have clear quality vision, mission, and objectives that contribute to manage, facilitate, and conduct activities towards quality assurance and enhancement of core processes based on the Malaysian Qualification Framework (MQF). The academic quality assurance should align and comply with Malaysian Qualifications Agency (MQA) standard by demonstrating that a desired level of quality of an academic activity has been attained, at any situation including the Covid-19 outbreak. Covid-19 crisis management comprising of Covid-19 Standard Operating Procedure (SOP) on resources allocation, teaching and learning activities, workplace, classroom, laboratory, instrument, and equipment. Immediate response and proper Covid-19 crisis management plan is the key to secure academic quality.

## Impact of Covid on Students in HEIs

According to Schleicher (2020), the crisis has exposed many shortcomings and inequities in the education system stemming from online education accessibility, and the issue of supportive environments needed for learning, up to the misalignment between resources and needs. Baik et al. (2019) argued that student well-being was affected in HEIs during Covid pandemic. This was supported by Auerbach et al. (2018) that undergraduate students are particularly prone to mental distress during the pandemic. According to Dodd et al. (2021), only 35% of students reported a 'sufficient level of well-being' during the first months of the pandemic, and 32% reported very low well-being'. This was supported by Lize et. al., (2023) that, when arriving at university, students' well-being is positively correlated to their academic confidence. Fodjo et al. (2021) reported a negative impact of Covid-19 on the well-being of students. This was further supported that self-efficacy is significantly correlated with well-being and academic confidence, as expected based on Gutierrez and Tomas (2019) and St Clair-Thompson et al. (2017).

Ruth et al. (2021) highlighted that there is expanding evidence of the HEI students distress associated with facing multiple abrupt changes and the need for rapid adaptation to a variety of academic, social, and financial challenges. According to Nutifafa et al. (2022), academic stress and future anxiety independently and serially mediated the relationship between fear of Covid-19 and psychological distress. Covid-19 related changes has evoked academic stress in American undergraduate and graduate students as reported in Scheffert et al. (2021). Nutifafa et al. (2022) also stressed that efforts should be made at assessing the source of students' distress

in relation to the fear of Covid-19, to enable professionals to design and develop holistic intervention strategies that best suit the needs of students as they navigate the ravages of the pandemic.

### **Problem Statement**

During the Covid-19 crisis, HEIs in Malaysia were given flexibility in formulating their strategies related to teaching and learning. This has led to differences in the Covid-19 management strategies related to teaching and learning between HEIs (Ho & Wearn, 1996; Prasad & Jha, 2013; Teeroovengadum et al., 2016). Most of the HEIs literature have characterised universities as heavily coupled organizations with multiple decision-makers, unclear technology, and competing goals that impede far-reaching solutions (Fernandez & Shaw, 2020). According to Lim (2022), private HEIs institutions faced financial challenges due to students' decisions to defer and/or delay their studies following the Covid-19 pandemic. He added that HEIs also encountered challenges in the disruptions of their teaching and learning activities. Many HEIs were forced to shut down temporarily and switch their conventional physical activities to online activities, as instructed by MOHE. Without regards to their familiarity of e-learning platforms or their ability to use these information technologies in their education, the Covid-19 pandemic has tested the extent to which both academic staff and students are prepared to adopt and use these technologies in their online learning activities (Allam et al., 2020). The lockdown forced HEI curricula online, leading to great challenges for those involved in the delivery and receipt of learning and teaching (Almazova et al., 2020). Consequently, many students were forced to deal with advanced online information and communication technologies (ICTs) to accomplish their learning activities and follow up with their instructors in a safer manner to ensure social distancing was maintained during the Covid-19 period (Kurilovas & Kubilinskiene, 2020). Nevertheless, the sudden adoption of these online services during the pandemic may have negative effects on academic staff and students' lives, as there are several issues that may hamper and demotivate them during their teaching and learning process (Al-Kumaim et al., 2021). According to Oleksiyenko et al. (2023), HEIs lacked knowledge on handling the treacherous global pandemic and took cautious steps to implement partial or full closures and openings. In the tightly regulated policy environments, academic executives made quick decisions on lockdowns, e-learning, space regulations, and sanitization procedures. The lockdowns impeded students' study progress. Graduation ceremonies were cancelled or delayed. International students became stranded. The processes of teaching and examination became more complicated, as online testing was neither fully trusted, nor always efficiently managed.

Awareness and crisis management-based programs can be developed to help enhance crisis awareness and build the knowledge base of crisis management among organizational leaders, members, and stakeholders. Preparing an organization, in advance, by training on crisis management is better than paying a high cost in the future. Furthermore, training can speed up an organization's recovery from crisis events (Carroll & Buchholtz, 2003). This paper investigates how students' perceptions are affected by implementation of crisis management plans in HEIs. The importance of a well-designed and properly implemented crisis management plan is highlighted as it minimises disruption to service delivery, which affects academic quality and perception of students, especially regarding their motivation and experience as a student. Many HEIs in Malaysia have adapted Covid-19 related SOPs suggested by the government to deal with this new arrangement, and a few are establishing their own Covid-19 crisis management plan as a more comprehensive solution to attain the operation in their institution and aimed to attain academic quality during this pandemic phase.

## **Crisis Management**

Crisis management is a research ground in the field of human resource development. Fener and Cevik (2015) defined crisis as a sudden event that reduces the chances of progress of the organization and achieving outstanding performance and may lead to the collapse and demise of the entire organization. Alves et al. (2020) added that with crises, officials and decision-makers in the organization lose their ability to control it or its future directions. Crisis are also interpreted as an event that would have negative implications on the organisation or company (Fajar, 2011). Since the number of crisis events happening in HEIs in current years keep increasing, crisis management has increasingly discussed among the people in HEIs. Despite the increasing level of risks HEIs are facing today related to the complexity of institutional operations, technology, and infrastructure there is a lack of overall crisis management plans at the institutional level. Crisis management refers to the organization's ability to deal quickly and efficiently with the ongoing crises, with the aim of reducing or preventing the risks and negative effects of the crisis, through identification, diagnosis, planning and confronting the crisis (Taneja et al., 2014). Smith (2017) added crisis management as a treatment that must be done given the issues outside the control of the institution or company. According to Jia and Holly (2010), prior to any disaster, a successful crisis management plan exposes weaknesses within the current system and develops facilities to handle the issues. So, the crisis management team can portray these capabilities with speed and efficiency during a crisis and can learn from the experience to further improve the program.

Crisis events could cause panic within the campus community and raise questions regarding colleges and universities' abilities to timely prepare and respond to crisis events while maintaining a culture of inclusivity and open access. Shamsir et al. (2021) highlighted that, "The lack of clear planning frameworks and strategies for pandemic preparedness by HEIs has been exposed as a result of the Covid-19 pandemic". Thus, for administrators of educational institutions, it is crucial to develop an effective strategic plan that would likely prevent the occurrence of a crisis event or minimize the impact if one occurs (Wang & Hutchins, 2010). As Covid-19 became a global issue and was declared a pandemic, it led to lockdowns across the world. These lockdowns have created ample impacts and challenges for those involved in the teaching and learning, especially crisis management in HEIs (Almazova et al., 2020). Effective campus crisis management depends on the capacities of institutions and administrators to understand and resolve problems and their causes.

## **Exploratory Structural Equation Modelling**

Factor analysis is a statistical analysis method used to investigate latent factors that are not directly observable through the combination of manifest variables that are directly observable. Based on how it is used, and the restrictions applied, factor analysis can be used to explore and summarise a dataset (exploratory) or to confirm the fit of a model (confirmatory). Marsh et al. (2014) proposed exploratory structural equation modelling (ESEM) as an extension for exploratory and confirmatory factor analysis as it allows investigation of the causal relations between the latent factors and the strength of these relations. Furthermore, ESEM is proposed instead of conventional SEM as it will allow the models to be more flexible and better reflect real-life circumstances. ESEM combines the exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). Instead of using pre-determined models, ESEM uses EFA to extract a model that fits the analysed dataset. ESEM then uses CFA to investigate the goodness-of-fit of this model and investigate the causal relations between latent factors present in the model.

## Materials and Methods

The questionnaire was crafted to gauge students' perceptions resulting from the implementation of Covid-19 crisis management plans in their respective institution, particularly focusing on teaching and learning activities. Its primary aim is to investigate various aspects of the Covid-19 crisis management plan within HEIs, including its availability, proper implementation, accessibility to all students, and the integration of key SOPs such as hardware and software improvements. These questionnaire items were adapted for the HEI context from instruments developed by Adamu and Mohamad (2019). Based on the works of Alem et al. (2016) and Yang et al. (2021), another section of the questionnaire delves into students' perceptions regarding both the negative impacts and benefits of the implemented Covid-19 crisis management plans. This section specifically examines the effects on their teaching and learning experiences, motivation levels, and academic quality. Each perception is evaluated using a minimum of three measurement items, employing a 5-point Likert scale, namely, 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree). Before dissemination, the questionnaire underwent a revision process following a pilot study. Surveys were conducted using the online survey platform Qualtrics for ease of administration and data collection.

## Participants and Setting

The target population comprises students enrolled in Malaysian HEIs during the period of 2020 to 2021, coinciding with the implementation of the MCO in Malaysia. Student volunteers stationed across various states in Malaysia were enlisted to assist in conducting surveys within the vicinity of their respective universities or through their contacts. A dataset containing 225 responses was collected from December 2023 to March 2024. Following a cleaning process, a cleaned dataset consisted of 205 valid responses were extracted. In addition, an item was scored with a reversed ranking and was reversed before analysis. Table 1 provides an overview of the demographic profile of the respondents participating in the study.

**Table 1:** Demographic characteristics of respondents (N = 205)

Characteristics	Category	Frequency	Percentage (%)
Academic Discipline	Physical Sciences, Engineering and Medical	88	42.9
	Arts, Business, and Social Sciences	79	38.6
	IT, Computer Science and Mathematics	38	18.5
Year of Study in 2021	1 <sup>st</sup> Year	98	47.8
	2 <sup>nd</sup> Year	65	31.7
	3 <sup>rd</sup> Year	13	6.4
	4 <sup>th</sup> Year	29	14.1
Public / Private	Public Institution	144	70.2
	Private Institution	61	29.8
Diploma / UG	Undergraduate Student	186	90.7
	Diploma Student	19	9.3
>20% hands-on classes	Yes	158	77.1
	No	47	22.9

To investigate the complex interplay of factors influencing academic quality, we employ factor analysis. Exploratory Factor Analysis (EFA) uncovers potential latent factors within a dataset, while Confirmatory Factor Analysis (CFA) assesses causal relationships among these factors.

Each method has distinct advantages and limitations, detailed in Asparouhov and Muthen (2009). A relatively new approach, Exploratory Structural Equation Modelling (ESEM), extends CFA, accommodating fewer rigid models and offering a broader array of potential structures. Our study implements ESEM on R 4.2.1 utilizing the packages *psych* and *lavaan*.

## Results

As the first step of ESEM, EFA with 4 factors was performed on the data to obtain a model that best fits the data. The model obtained from EFA is not bounded to follow pre-existing theories that was used in developing the questionnaire due to its exploratory nature. Consequently, the factors from the EFA model are interpreted differently compared to the theoretical factors. In the theoretical model with four factors, these factors are interpreted as implementation of crisis management plan (CMP), students' motivation, academic quality, and students' social experience. In comparison, our ESEM model merges academic quality and students' social experience into overall quality of academic and student experience, whereas the implementation of CMP factor is separated into two factors in our ESEM model.

Table 2 provides an overview of the factors of the ESEM model with the items which highly affects or defines each factor. Quality of student experience refers to both the academic and social aspects of students' experience in their institution. As shown in Table 2, quality of student experience is affected by whether the implemented SOPs under the CMP allow seamless transition from physical learning experience to online learning, such as online lectures and tutorials, online interaction with friends and colleagues, and extracurricular activities.

**Table 2:** Examples of Items in Each Factors

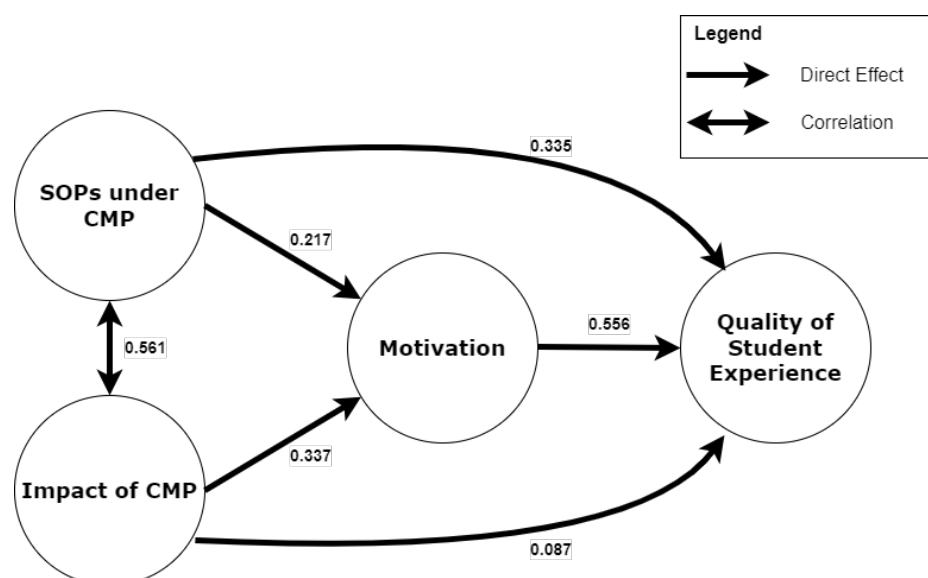
Factor	Items	Mean	Standard Deviation	Proportion of Variations (%)
Quality of Student Experience (17 items)	Covid-19 SOPs in my institution have			
	• made it easy to conduct discussions during online tutorials.	3.86	1.09	
	• made it easy to access and obtain materials used in online lectures.	4.07	0.96	
	• allows me to safely interact with my friends and colleagues.	3.71	1.13	12.0
	• effectively minimised the impact on academic quality.	3.68	1.01	
	• effectively minimised the impact on my experience as a student.	3.78	1.06	
Motivation (5 items)	Covid-19 SOPs in my institution have			
	• motivated me to complete my study objectives.	3.62	1.11	9.8
	• motivated to join online lectures and tutorials.	3.56	1.21	
	• helped me to focus on my study.	3.46	1.21	
SOPs under CMP (9 items)	My institution			
	• properly prepares and informs me of actions to be taken when a crisis occurs.	3.99	1.05	
	• informed me on where I can find information regarding crisis management.	3.93	1.03	11.8
	• often circulates information concerning crisis management through internal communication.	3.92	1.00	
Impact of CMP (5 items)	During Covid-19, my institution			
	• installed and upgraded the hardware used.	3.65	1.16	
	• made improvements to the software used.	3.85	1.05	6.4
	• provided training on the usage of software that is useful to me.	3.61	1.13	

The first factor, quality of student experience, can be summarised as whether the SOPs implemented effectively minimised the interruptions from crises onto academic and social aspects of students' experience. The second factor, motivation, includes items that measure whether the implemented SOPs motivated students to complete their study objectives, join online lectures and tutorials, and focus on their self-study. In addition, students' motivation is affected by whether they often feel anxious with the implemented SOPs. The third factor mostly measures whether HEIs communicate effectively and provide clarity on information regarding CMP onto students. This factor includes measurements of communication and clarity of information pre-COVID-19 and during the COVID-19 period. Meanwhile, the fourth factor measures the impact of actions taken by HEIs are noticed by students. This factor measures whether actions taken by the HEIs reduce the anxiety of students and protected their interests. Furthermore, this factor also measures whether HEIs made improvements onto the hardware and software used by students.

**Table 3:** Comparative Statistics of ESEM Model

Statistics of ESEM Model	
Comparative Fit Index (CFI)	0.901
Tucker-Lewis Index (TLI)	0.873
	0.063 (Lower)
Root Mean Square Error of Approximation (RMSEA)	0.070
	0.076 (Upper)

Next, ESEM was conducted on the data using the model and factors extracted with EFA. Table 3 presents some goodness-of-fit statistics of the model fitted. It is important to note that for Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI), values greater than 0.90 indicates that the model is a good fit for the data. Meanwhile, values less than 0.08 for RMSEA is suggested for a model to be a good fit for the data. Based on Table 3, the CFI for the model is 0.901, higher than the suggested value, while the TLI is 0.873, barely not reaching the suggested value for TLI. Meanwhile, the RMSEA for the model is 0.070. Hence, we can conclude that the ESEM model is an acceptable fit for the data.

**Figure 1:** Path Diagram of ESEM Model

From Figure 1, a positive direct effect (one-way effect) is observed from motivation onto the quality of student experience. This suggests that a high score in motivation would generally associate to a high score in the quality of student experience, but the reverse is not necessarily true. The same can be said regarding the SOPs under CMP onto quality of student experience. In addition, students' motivation is directly affected by SOPs under CMP and the impact of CMP. The coefficients for the direct effects could then be used to compare the effects of various factors onto another factor. A positive correlation (two-way effect) between implementation of SOPs and impact of crisis management plan noticeable by students is also observed in the model. As SOPs under CMP and impact of CMP are correlated to each other, a high score in either factor would likely to associate with high score on the other factor. Additionally, the indirect effect of SOPs under CMP and impact of CMP onto quality of student experience could be investigated by multiplying the direct effect of either factor onto motivation by the direct effect of motivation onto quality of student experience. Based on Figure 1, we could investigate the total effects of each factor onto quality of student experience by adding the direct effects

with the indirect effects. It is shown that motivation (0.556) plays the biggest role onto quality of student experience, followed by the SOPs under CMP (0.456) and impact of CMP (0.274).

## **Conclusion**

Based on the results of the factor analysis provided in Table 2, policymakers could improve quality of student experience by implementing SOPs that allows students to transition from physical learning activities easily and seamlessly onto online learning activities, including online lectures and tutorials, online interactions with colleagues, and extracurricular activities. Realistically, this can be done by integrating aspects of online learning into the curriculum and providing training to students on platforms used in online learning. In turn, this would minimise disruption onto learning activities as students are previously acquainted with SOPs that are implemented in the event of a crisis. In addition, HEIs need to implement effective communication and ensure clarity of information regarding CMP. As a preventive measure, HEIs could provide easily accessible resources containing information on actions to be taken in a crisis and notify students of the availability of such resources. Additionally, HEIs could provide trainings and simulations for students to experience some emergency events. During crises, HEIs should establish regular communication with weekly newsletters and discussion forums to provide information and ensure students of actions taken. Furthermore, HEIs should continuously make improvements onto the hardware and software used to further reduce the possibility of technical disruptions.

As motivations affects quality of student experience, HEIs need to improve students' morale and motivate students to continue performing their learning activities. As an example, HEIs could make attending lectures and tutorials more interesting by integrating advanced learning technologies to allow interactive and fun learning activities. As most learning activities are conducted online, further emphasis on self-study and own revision should be given to ensure reception of learning materials. In addition, crisis events might apply additional mental pressure on students, hence it is important for HEIs to provide counselling services for students to express their concerns. In turn, this would help in improving students' mental health, which could improve students' motivation. The authors also acknowledge a deficiency in the research. Given that nearly two years have elapsed since the pandemic, students' recollection of their experiences during that period has naturally waned, thus limiting the study's capacity to capture their immediate reactions to the crisis management plan. Nevertheless, the study does give us some direction on how a crisis management plan in HEIs should be implemented to uphold the academic quality.

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