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Abstract

This present study's objective is to examine the relationship between university characteristics, and entrepreneurial orientation, towards employability among Malaysian public university undergraduates during the COVID-19 pandemic. This study is important to identify the influencing factors for graduates' employability in Malaysia. The study integrated these variables under the theoretical lens of the resource-based view. In this study, a quantitative method was used. An online survey questionnaire was distributed to 20 public universities in Malaysia. A total of 433 graduates from the year 2016 until 2019 were respondents considered in this study. The Partial Least Squares Structural Equation Modeling (PLS-SEM) was employed to test the validity and reliability of the measurement model and structural model to check the relationships of the constructs. The findings of the study showed that university characteristics and entrepreneurial orientation have significant influences on graduates' employability in Malaysia during the COVID-19 pandemic. The findings provide theoretical and practical implications to public universities and policymakers of Malaysia. This study only focused on public universities in Malaysia which are considered limitations of this study. Therefore, recommendations for future research work should be focused on post-COVID-19 in similar conceptual research.
Keywords: University Characteristics, Entrepreneurial Orientation, Graduates' Employability, COVID-19 Pandemic, PLS-SEM, Malaysia

Introduction

COVID-19, a once-in-a-generation catastrophe that caused Malaysia's worst economic collapse since 1998, is expected to impact the world in 2020. Movement Control Order (MCO) was implemented to prevent the spread of COVID-19. However, this caused a spike of 200 thousand in job losses and a consequent rise in unemployment to a record 718.1 thousand people in 2020. The pandemic has a direct impact on new workers, especially recent college grads. More unemployed people who lost their jobs during the pandemic are making it more difficult for graduates to land work.

Meanwhile, Malaysia's 2020 graduation population is expected to reach 5.36 million, up 4.4% from 2019. (5.13 million persons). As a result, there were about 4.56 million graduates in the

labor force, which includes both those who are working and those who are unemployed (2019: 4.29 million persons). GLFPR (graduating labor force participation rate) rose to 85.0% in 2019 from 83.5% in the meantime. There were 4.35 million people employed in 2019, up from 4.12 million people in 2019. While the unemployment rate for graduates rose to 4.4%, there were approx. 202.4 thousand unemployed graduates. The number of graduates who were not in the workforce decreased by 5.1% to 800.9 thousand people as compared to 844.0 thousand people in 2019.

Over two-thirds (68.8%) of the 3.00 million employed graduates were competent, with 40.8% of them working in professional jobs (1.78 million people), followed by technicians and associate professionals (17.2%). (749.5 thousand people, a total of 31.2% of recent grads were employed in jobs requiring some semi-skill or low-skill. Classified as misfits in vocation, this set of graduates failed to put their knowledge and skills to good use. In the semi-skilled group, 28.9 % or 1.26 million people were employed, most of the service and sales workers (11.9%), clerical support workers (9.6%), and craft and allied trades employees (3.4%). There were 98.1 thousand people employed in the low-skilled category, which accounted for the remaining 2.3% of the workforce.

Over 70% of unemployed grads were inactive when looking at the length of time they had been out of work. More than 158.4 thousand people are unemployed. Graduates who had been unemployed for less than three months made up the majority of this group, accounting for 45.1 percent of the total (71.4 thousand people). Furthermore, by the end of 2012, 30.1% (47.6 thousand people) and 14.8% (23.5 thousand people) of them had been jobless for three to five months and six to twelve months, respectively. Additionally, 16.0 thousand people, or 10.1% of graduates, remained unemployed for more than a year. In 2020, jobless graduates who were not actively seeking work made up 21.7% of the total number of unemployed graduates.

In this age of Covid-19 pandemics, finding a job is not a simple task, especially among university graduates. This is because not only is it because of fewer jobs available, but it is also because employers want to find an employee who has quality characteristics to hold a position in their company. According to Raybould & Sheedy (2005) employers are looking for particular employability abilities in graduates based on the type of position and scope of work. Therefore, employers are looking for more quality, highly skilled employees and need someone with various skills to reduce the workforce to save on the cost of salary payments and costs that have to be borne by their company. There are several important elements to improve the quality of graduates. However, to support graduates' employability, university characteristics and their entrepreneurial orientation are the potential factors. Universities play a significant role in enhancing graduates' perspectives, competencies, confidence, and confidence by delivering cross-curricular courses paired with specialized training (Iglesias-Sánchez et al., 2016). Educational institutions must play their part in ensuring that the quality of education given results in high-quality graduate students. In the educational area, quality is a choice rather than a change (Advant & Makhirja, 2003; Kin et al., 2020). Entrepreneurial orientation (EO) including pro-activeness, innovation, and risk-taking, is among the most sought by graduates. In the organizational sense, Gorostiaga et al (2019) believe that innovation in graduates adopts a new learning environment in university. Risk-taking among graduates to apply new concepts or techniques in their study periods. Being proactive entails

looking for graduates' activities in universities by involving most of the activities. Therefore, university management and resources support such as management support, cultural, informational, research, and educational activities which under the university characteristics support for the graduates still lacking from past research. Further, graduates entrepreneurial orientation such as innovativeness, proactiveness, and risk-taking also limited research conducted during this pandemic. So concerning these research gaps, the effects of university characteristics and entrepreneurial orientation on graduates' employability, which was the most concern of this study.

Hence, the current study examines samples from 20 public university undergraduates from 2016 until 2019 during the COVID-19 pandemic with the resource-based view lens (Sapian et al., 2022). The article is divided into five sections, the first of which is an intro. The literature review, model specification, and hypothesis development are the focus of the second section. The methods utilized to conduct the research are discussed in the third section. The conclusion and limitations of this study are found in the fourth and fifth sections, respectively, of the research.

Literature Review
Graduates' Employability in Malaysia
Graduates' employability may (GE) be defined as the ability of a graduate to gain and stay in a job, as well as their ability to adapt to the changing demands of the industry (Suleman, 2016). GE refers to the set of talents that an employee must possess in order to be successful (Bustamam et al., 2015).

The employment market has become increasingly competitive over the past few decades, and graduates require a wide range of skills to advertise their abilities and academic credentials. Graduates usually fail because they don't show this marketability and instead focus solely on their academic achievements (Ali et al., 2018). Meanwhile, in Malaysia university characteristics and their entrepreneurial orientation identify as important contexts to support GE. According to Chhinzer and Russo (2018), employer perception of professional maturity, soft skills with problem-solving, continual learning, and academic achievement. Students' ability to manage their time, work with others, and pay attention to detail are among the abilities employers look for in a graduate student. In other words, these outcomes are possible because of university qualities such as managerial assistance, facilities, and programs that can enhance their abilities. From instilling values to providing knowledge and developing skills and attributes that prepare students for a job, employability encompasses the entire gamut of university characteristics. In addition to emphasizing a student's ability to find work in their field of study, many colleges are emphasizing how well they can prepare their graduates for a varied and fast-changing workforce (Kamaruddin et al., 2020; Yusof and Ghouri, 2013).

Entrepreneurship studies have grown significantly in academic circles - resulting in a shift in the general employment structure (e.g Chhinzer & Russo, 2018). Getting a job after graduating from college has become more difficult due to economic realities, such as layoffs, shifts in the labor market, and restructuring (Duval-Couetil, 2013; Kirby, 2004). With simply a university education, they may not adequately prepare graduates to face a rapidly changing

world in which entrepreneurial start-ups play a critical role in economic development and growth (Duval-Couetil, 2013; Minniti, 2006).

Many studies were conducted to understand and grasp the situation, as well as the problems and challenges facing Malaysian GE. In consideration of the research, we may conclude that graduates' employability is the primary concern. As an example, Kamaruddin et al (2020) investigate the impact of the COVID-19 pandemic on the global economy. Even during the lockdown period, 1,445 final-year students from USIM were prepared to execute their internships, according to the findings of the study. Students at USIM were eager to participate in GE programs, despite the ongoing COVID-19 pandemic. That the university cares so much about the employability of its alumni says a lot about the school's ethos. Previous literature depicted the importance of university-industry collaboration in promoting individual learning and integrating personal and professional growth into the institution's overall mission. A review of current methods for enhancing the employability of recent college graduates included these observations. Palvin (2014) undertook additional research on the role of educators in assisting graduates in finding employment, which involved 240 interviews with university professors and managers. Their result shows that they intuitively play a role in assisting graduates' careers. In addition, Rabayah and Sartawi (2008) examined 80 students at selected Palestinian institutions. They investigated the influence of university support on students' and trainees' future careers and employability. Many trainees found work after completing their practical training, and they attributed this to the program's success. Ayarkwa et al (2012) surveyed 120 firms in Ghana that offered industrial training placements and evaluated the performance of students and the design of the program. According to their findings, students learn new skills in training, which could help them land a job after graduation. Moreover, other studies suggested that university education is facing a growing difficulty in adjusting degrees, teaching material, and training techniques to match industrial expectations (e.g. McIlveen and Pensiero, 2008; Bhanugopan and Fish, 2009; Afonso et al., 2012; Nuwagaba, 2012; Torres-Machi et al., 2013).

We have linked both topics to the past literature. Rae (2007) claims that students and graduates with entrepreneurial abilities are more likely to find work than those who do not. Those with a strong entrepreneurial spirit are more likely to be enterprising, marketable, and hence more likely to secure a high-level graduation job. For more evidence, Laguador and Ramos (2014) discovered that companies prefer graduates with entrepreneurial abilities. According to Charney and Libecap (2000) graduates of an entrepreneurship-focused curriculum were more likely to be employed full-time and happier with their job prospects than non-entrepreneurship graduates.
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Regardless of these concerns, the Malaysian government has paid attention to Malaysian GE issues through the Ministry of Higher Education. The government created the graduates' tracer study system (Sistem Kajian Pengesanan Graduan @ SKPG) in order to determine the employment status and issues among recent graduates annually. Because of this study's findings, the government is able to make better decisions and policies regarding GE. In 2002, Malaysia's economic planning section performed a study on public universities and polytechnics. The Department of Higher Education reformed and centralized the study in 2003 (Kardi et al., 2009). They conducted the survey online in 2006, and it was an immense success. Afterward, the follow-up study was undertaken regularly in 2008 and continuously

in 2014. Besides graduates from universities, the survey also includes graduates from community colleges and public training skills schools as recently as 2018. They currently divide the SKPG system into two phases: Phase I and Phase II. For SKPG 1.0, the survey is open to the graduating class of each year from the time they finish their studies until the conclusion of the calendar year. It's also worth noting that after SKPG 1.0, the following year's two-month follow-up study of SKPG 2.0 is available. The SKPG survey collects data on a wide range of topics, including a graduate's characteristics, academic pursuits, work experience, and other factors. Workers' employment status, industry sector, wage, and employed/self-employment information, as well as the relationship between their current positions and prior academic training, are all part of the data gathered from individuals who are employed. To better understand why people aren't working, the study inquire about their reasons for not doing so, the frequency with which they attend job interviews, their income expectations, and the approach they used to search for jobs. If you decide to continue your education after high school, we'll need information about your program, school, estimated graduation date, scholarship, and any previous academic achievements. Other than that, the SKPG system examined the prior academic program's curriculum, career guidance, teaching personnel, and facilities.

While it increasingly accepted the importance of graduate employability in higher education, there are a few systematic processes for how universities can operationalize employability, particularly considering the principles and best practices of university characteristics and graduates entrepreneurial orientation. Therefore, these two practices identify an important contribution to graduates' employability, which needs deeper research. Hence, the hypothesis between these variables towards graduates' employability is explained below.

H1: There is a positive and significant relationship between university characteristics and graduates' employability

H2: There is a positive and significant relationship between entrepreneurial orientation and graduates' employability.

Study Methods
This is part of a larger study on higher education in Malaysia. The results of a survey on university features and entrepreneurial orientation, as well as graduate employability, are summarised in this study. The UPSI ethical committee gave us the go-light to conduct the study, and we followed the Malaysian Code of Responsible Conduct in Research when doing so (2020). Likert scales were used to collect data (1 = totally disagree and 5 = totally agree). Krosnick and Fabrigar (1991) claimed that five, six, and seven-point Likert scales are more valid and reliable than shorter and longer scales, the five-point Likert scale was used.

We prepared the questionnaire in English and then translated it into Malay to guarantee reliability and validity. In order to avoid any misunderstandings, a back-translation procedure (Sperber, 2004) was employed. We piloted the survey with 30 students, following Hair et al (1992), and changed the phrasing of two items as a result. Google Forms were used to create the final questionnaire, which was then circulated over Facebook and Twitter. In the beginning, we sent the link over WhatsApp to all university grads from 2016 to 2019. We also shared it on the Facebook accounts of former students and faculty members of the university.

This study had an exploratory character its main focus on a specific demographic, therefore, we highlighted convenience sampling as a more effective technique to capture the viewpoints of this population, despite the obvious limitations of this approach because of the COVID-19 pandemic (Saunders et al., 2015).

There were 433 viable replies after three reminders were sent to the two social media platforms that had been addressed. The survey administration method and sampling strategy could impact how generalizable the results are. Given the difficulties of accessing this population, the risks of non-response and survey fatigue, and the need for good survey design (e.g. Fosnacht et al., 2013), we focused our efforts on promoting engagement rather than on enhancing response rates in our undergraduate student research.

Data Analysis
Participants
A total of 433 graduates from 20 universities across the northern, southern, eastern, central, and western parts of Malaysia took part in this study. About 52.9% of the graduate were females while the remaining were males. This revealed that the university is female dominant, most respondents from graduate employability have proven it was female. In addition, the employees' circulation in terms of age range shows that most respondents comprised Graduates aged between 24 to 30 years which is 413 people 95.4% followed by respondents aged 31 to 35 years which is 12 people 2.7%, while respondents aged 36 to 40 years only 2 people 0.5%, and lastly followed by respondents at aged 41 years and above who were only 6 people (1.4%). This analysis reveals that the most public university graduates who took part in this questionnaire were those aged 24 years to 30 years. Next, the University involved is a public university throughout Malaysia. We divide five university regions in this study based on where the university is located, northern, central, southern, western, and eastern. The highest number of respondents are from central which is 157 people 36.26%, followed by respondents from western Malaysia, which was 101 people, 23.32%. Then respondents from northern were 92 people, 21.25%. Next, the southern recorded 60 respondents 13.86%, followed by respondents from the eastern only 23 people 5.31%.

Normality and Common Method Bias
As Cain et al (2016) indicated, we used the web software, https://webpower.psychstat.org/models/kurtosis/, to test multivariate normality. Data were not multivariate normal, as indicated by the Mardia coefficient of multivariate skewness (t=169.158, p<0.01) and kurtosis (t=20.974, p<0.05). SmartPLS 3.2.3, a second-generation structural equation modeling software, was chosen to run the bootstrapped model tests. Ghouri and Mani (2019); Ramayah et al (2018) respectively recommended that the measurement model be tested first, followed by the structural model. We performed a collinearity assessment to see if our study had any common technique bias, as Kock and Lynn (2012) had recommended assessing the issue. For our study model, we constructed a random variable in Excel and then all the constructs (the dependent variable included) regressed against this common variable. Table 2 shows that the VIFs were all below the threshold of 3.3, hence there was no cause for alarm.

Table 2
Full Collinearity Testing

GE	UC	EO
1.449	1.331	1.196

Note: GE = Graduates' Employability, UC = University Characteristics, EO = Entrepreneurial Orientation

Measurement Model
We evaluated composite reliability by comparing extracted loadings to an average variance to confirm that the measurement items were accurate and reliable (Baskaran et al., 2021). Even though this study solely focused on a lower-order construct, measurement, we also evaluated validity and reliability. Because all loadings and AVEs were above 0.5, the CRs were all above 0.7, as can be shown in Table 3, which shows that the measurements are valid and reliable up to and including the second-order (Ramayah et al., 2018; Ghouri et al., 2021).

After that, the HTMT criterion proposed by Henseler et al (2014) was used to test the discriminant validity. We may conclude that all measures were discriminant if the ratios were lower than HTMT 0.85. Franke and Sarstedt (2019) further stated that the measures are discriminatory if their upper limit of the HTMT bootstrapping value does not include a 1. As can be seen in Table 4, all the ratios were less than or equal to 0.85, showing that the variables were separate.

Table 3
Measurement Model for the Constructs

Constructs	Items	Loadings	AVE	CR
Graduates' Employability	GE1	0.709	0.506	0.860
	GE2	0.744		
	GE3	0.671		
	GE4	0.702		
	GE5	0.769		
	GE6	0.667		
University Characteristics	UC1	0.737	0.552	0.831
	UC2	0.722		
	UC3	0.797		
	UC4	0.715		
Entrepreneurial Orientation	EO1	0.798	0.610	0.824
	EO2	0.805		
	EO3	0.739		

Table 4
Discriminant Validity (HTMT)

	1	2	3
Entrepreneurial Orientation	0.781		
Graduates' Employability	0.391	0.711	
University Characteristics	0.280	0.490	0.743

Structural Model

Hair et al (2019) recommended using a 5000-sample re-sample bootstrapping approach to get the path coefficient, t-values, p-values, and standard errors for the structural model. We have also claimed that the use of several criteria, such as the use of effect sizes and confidence intervals, instead of p-values, is a better way to assess the relevance of the hypothesis. Table 5 summarizes the criteria used to evaluate the hypotheses that were planned in this study.

Graduates' employability was positively correlated with university features (β= 0.412) and entrepreneurial orientation (β= 0.276) both at the $p<0.05$ level. H1 and H2 were both found to be correct. About 31% of the variation in university characteristics and entrepreneurial inclination may be explained by graduates' employability.

Table 5
Hypothesis testing (Direct effects)

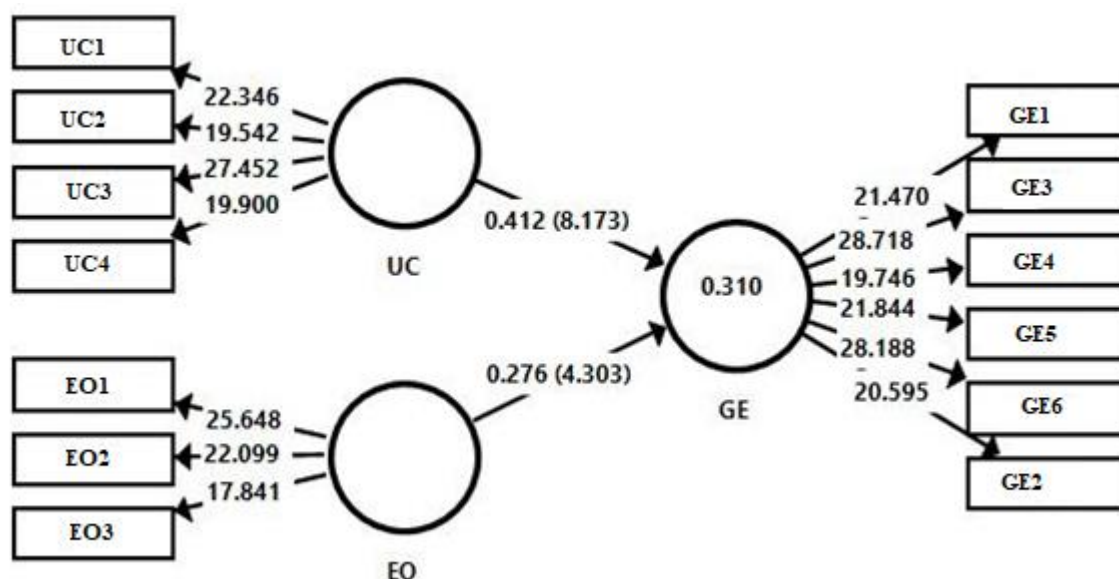| Hypothesis	Relationship	Std.Beta	Std.Error	t-value	p-value	f^2	Decision
H1	UC → GE	0.412	0.049	8.173	p<0.05	0.227	Supported
H2	EO → GE	0.276	0.064	4.303	p<0.05	0.102	Supported

*p<0.05 (t=1.645).

Figure 1: Structural Model

PLSpredict, a holdout sample-based procedure proposed by Shmueli et al (2019), is an additional recommendation. PLS-Predict and a 10-fold process are used to determine if case-level predictions are accurate. When all the item differences were less than, Shmueli and colleagues (2019) found that there was significant predictive power. However, when all the item differences were bigger, the predictive relevance was not validated. Table 5 shows that our model's predictive power is superior to that of the LM model and that the PLS model committed fewer errors than the LM model did.

Table 5
PLS-Predict

	PLS	LM		
Item	RMSE	RMSE	PLS-LM	Q²_predict
GE3	0.717	0.724	-0.007	0.189
GE6	0.732	0.740	-0.008	0.158
GE5	0.781	0.785	-0.004	0.134
GE1	0.691	0.693	-0.002	0.157
GE4	0.722	0.725	-0.003	0.119
GE2	0.720	0.720	0.000	0.102

Conclusion
This study aims to add to the body of knowledge by identifying the variables that impact the employability of graduates who have graduated from various types of universities with different entrepreneurial orientations.

Hypotheses about university qualities that are linked to graduates' employability were found to be statistically true, based on the research objectives. Under Pouratashi and Zamani (2019), who linked characteristics of Iranian universities with graduates' employability, this is a reasonable theory. Findings from the study showed that students' employability abilities could be categorized into three levels (basic, intermediate, and advanced). In addition, a factor analysis of university activities to enhance students' employability abilities revealed five activities, including management support, cultural, informational, research, and educational activities. The findings also show that graduates receive more support in terms of financial, skill growth, educational resources, and motivation, which boosts their employability within the umbrella of university characteristics.

The study also looked at the link between graduates' abilities to find work after graduation and their entrepreneurial orientation in Malaysian public universities. There has never been a direct empirical test of the impact of entrepreneurial orientation on graduates' employability. The results of this study, on the other hand, confirmed that graduates with an entrepreneurial orientation are more likely to find work after graduation. This study examines the impact of students' increased risk-taking, inventiveness, and initiative on their future employment prospects. This is in accordance with what Bell predicted (2016). Statistically, we observed a correlation between graduates' possibility of working in a professional or managerial capacity six months after graduation and both of their entrepreneurial orientation aspects.

Theoretical and Managerial Implications
Researchers and practitioners alike gain benefit greatly from the findings of this study. By examining the relationship between university characteristics, entrepreneurial orientation, and graduates' employability, this study has added to the current body of knowledge. First from the theoretical perspective, through the Resource-based View Theory, which strives to acquire a competitive advantage and/or performance from an organization's intangible resources, we explained the originality of this study (Youndt & Snell, 2004). So Williams (2014) used a strategic resource-based view of higher education institution resources in his research for this paper. Further, this theory is forwarded to graduates who need to create competitive

advantages over others as well. A wide range of institutions needed institutional resources, including schools and colleges. Organizational management relies heavily on the efficient utilization of resources toward the achievement of goals. Barney (1991) as well as Kong & Prior (2008) both mention this. Resources are sought, acquired, and used in a variety of ways by colleges and universities as they strive to achieve various objectives. Many post-selection basic observational studies have examined the proportion of institutional resources. Graduation rates (Anstine, 2013) and school rankings have been employed in periodic inspections as independent variables in determining income outcomes (Schlesselman & Coleman, 2013). Organizational capital has been used as a control variable in other research to analyze how well universities produce student achievement (Sav, 2013). University features are clearly a factor in the quality of students produced. As a vital part of ensuring that students may study comfortably and finish with honors, educational institutions play an essential role. The university's unique features attracted high-quality students. In order for students to be able to study comfortably and graduate with honors, educational institutions play an important role.

Limitation and Recommendation
We only distributed surveys to 20 public institutions according to five regions in Malaysia, therefore, this study relied on current procedures, and we collected the data via an online Google Form link, which may have led to bias in the responses. However, it can be reduced by looking to the back of the sentence for the answer. Because of the unique nature of academics in private universities, additional research can be done with the distribution of questionnaires in other private universities with a bigger number of respondents in order to get a more complete result by using the probability sampling technique. Besides that, we suggest that conduct research qualitatively for graduates' employability, especially from their entrepreneurial orientation perspective, or conducting a study for post-COVID-19 in a similar research construct.

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